A NEW
ORCHARD
AND
GARDEN:

OR,

The best way for Planting, Graffing, and to make any Ground good for a rich Orchard: Particularly, in the North, and Generally for the whole Common-wealth, as in Nature, Reason, Situation, and all Probability, may and doth appear.

With the Country Houſ-wifes Garden for Herbs of Common uſe: Their Virtues, Seaſons, Profits, Ornaments; variety of Knots, Models for Trees, and Plots, for the beſt ordering of Grounds and Walks.

AS ALSO

The Husbandry of Bees, with their ſeveral Uſes and Annoyances:

All being the Experience of Forty and Eight years Labour, and now the third time Corrected, and much enlarged. By William Lawſon.

Whereunto is newly added the Art of Propagating Plants, with the true Ordering of all manner of Fruits, in their Gathering, Carrying home, and Preſervation.

Skill and pains, bring fruitful gains.

Nemo ſibi Natus.

London, Printed by *William Wilſon*, for *George Sawbridge*, at the Bible on Ludgate-hill, Near Fleet-bridg. 1665.

To the Right Worſhipful

Sir HENRY BELLOSES,

Knight and Baronet.

Worthy Sir,

WHen, in many years, by long Experience I had furniſhed this my Northern Orchard and Country Garden with needful Plants and uſeful Herbs, I did impart the view thereof to my Friends, who reſorted to me to confer in matters of that nature; they did ſee it, and ſeeing it, deſired it; and I muſt not deny now the publiſhing of it (which then I allotted to my private delight) for the publick profit of others. VVherefore, though I could plead Cuſtome, the ordinary excuſe of all VVriters, to chuſe a Patron and Protector of their works, and ſo ſhroud my ſelf from ſcandal under your Honourable favour, yet have I certain reaſons to excuſe this my preſumpti-

ſumption: Firſt, the many Courteſies you have vouchſafed me. Secondly, your delightful skill in matters of this nature. Thirdly, the profit which I received from your learned Diſcourſe of Fruit-trees. Fourthly, your animating and aſſiſting of others to ſuch endeavours. Laſt of all, the rare work of your own in this kind; all which to publiſh under your Protection, I have adventured (as you ſee). Vouchſafe it therefore entertainment, I pray you, and I hope you ſhall find it not the unprofitableſt ſervant of your Retinue; for when your ſerious employments are over-paſſed, it may interpoſe ſome commodity, and raiſe you contentment out of Variety.

Your Worſhips

moſt Bounden,

William Lawſon.

THE

PREFACE,

To all VVell-minded.

ART hath her first Original out of Experience, which therefore is called, The School-Mistriss of Fools, because she teacheth infalibly, and plainly, as drawing her knowledg out of the course of Nature (which never fails in the general) by the Senses, feeling, apprehending, and comparing (with the help of the Mind) the Works of Nature; and as in all other things Natural, so especially in Trees. For what is Art more than a provident and skilful Correctrix of the faults of Nature in particular works, apprehended by the Senses? As when good ground naturally brings forth Thistles, trees stand too thick, or too thin, or disorderly, or (without dressing) put forth unprofitable Suckers, and such like; all which, and a thousand more, Art reformeth, being taught by Experience; and therefore must we count that art the surest, that stands upon Experimental Rules, gathered by the Rule of Reason (not conceit) of all other Rules the surest.

Whereupon have I, of my meer and sole Experience, without respect to any former written Treatise, gathered these Rules, and set them down in writing, not daring to hide the least talent given me of my Lord and Master in Heaven. Neither is this injurious to any, though it differ from the common opinion in divers points, to make it known to others, what good I have found out, in this faculty by long tryal and Experience. I confesse

feſs freely my want of skill in the Art of Planting: and I admire and praiſe Pliny, Ariſtotle, Virgil, Cicero, *and many others, for wit and judgment in this kind, and leave them to their times, manner, and ſeveral Countries.*

I am not determined (neither can I worthily) ſet forth the praiſes of this Art; how ſome, and not a few, even of the beſt, have accounted it a chief part of earthly happineſs, to have fair and pleaſant Orchards, as in Heſperia *and* Theſſaly, *how all with one conſent agree, that it is a chief part of Huſbandry,* (as Tully de Senectute) *and Husbandry maintains the world: how ancient, how profitable, how pleaſant it is; how many ſecrets of Nature it doth contain, how loved, how much practiſed in the beſt places, and of the beſt. This hath been done by many; I only aime at the common good. I delight not in curious conceits, as Planting and Graffing with the Roots upwards, inoculating Roſes on Thorns, and ſuch like; although I have heard of divers, proved ſome, and read of more.*

The Stationer hath (as being moſt deſirous, with me, to further the common good) beſtowed much coſt and care in having the Knots and Models by the beſt Artizan cut in great variety, that nothing might be any way wanting to ſatisfie the curious deſire of thoſe that would make uſe of this Book.

And I ſhew a plain and ſure way of Planting, which I have found good by 48 *years* (and more) *experience in the North part of* England. *I prejudicate and envy none; wiſhing yet all to abſtain from maligning that good* (to them unknown) *which is well intended. Farewell.*

Thine for thy good,

W. L.

THE

The best, sure, and readiest way to make a good ORCHARD and GARDEN.

CHAP. I.

Of the Gardener, and his Wages.

WHosoever desireth and indevoureth to have a pleasant and profitable Orchard, must (if he be able) provide himself of a Fruiterer, Religious, Honest, Skilful in that Faculty, and therewithal painful. By Religious, I mean (because many think Religion but a Fashion or Custom to go to Church) maintaining and cherishing things Religious; as Schools of Learning, Churches, Tythes, Church goods and Rights, and above all things, Gods Word, and the Preachers thereof, so much as he is able, practising Prayers, comfortable Conferences, mutual Instructions, to Edifie, Alms, and other works of Charity, and all out of a good Conscience. Religious.

Honesty in a Gardener, will grace your Garden, and all your House, and help to stay unbridled Serving-men, giving offence to none, nor calling your Name into question by dishoneſt acts, nor infecting your family by evil counsel or example. For there is no plague so infectious as Popery and Knavery; he will not purloin your profit, nor hinder your pleasures. Honest.

Concerning his Skill, he must not be a Sciolist, to make a shew or take in hand that which he cannot perform, especially in so weighty a thing as an Orchard; than the which there can be no humane Skilful.

human thing more excellent, either for pleaſure or profit, as ſhall (God willing) be proved in the Treatiſe following. And what an hindrance ſhall it be, not only to the owner, but to the common good, that the unſpeakable benefit of many hundred years, ſhall be loſt by the audacious attempt of an unskilful Arboriſt?

Painful. The Gardner had not need be an idle or lazy Lubber, for ſo your Orchard, being a matter of ſuch moment, will not proſper, there will ever be ſomething to do. Weeds are alwayes growing, the great Mother of all living Creatures, the Earth, is full of ſeeds in her bowels, and any ſtirring gives them heat of Sun, and being laid neer day, they grow: Moles work daily, though not alwayes alike. Winter herbs at all times will grow (except in extream froſt). In winter, your trees and herbs would be lightned of Snow, and your allies cleanſed: drifts of Snow will ſet Deer, Hares, and Conies, and other noiſome beaſts, over your wals and hedges into your Orchard. When Somer cloaths your borders with green and ſpeckled colours, your Gardner muſt dreſs his Hedges, and Antick works; watch his Bees, and hive them; Diſtil his Roſes and other herbs. Now begin Somer fruits to ripen, and craves you hand to pull them. If he have a Garden (as he muſt needs) to keep, you muſt needs allow him good help, to end his labours which are endleſs; for no one man is ſufficient for theſe things.

Wages. Such a Gardner as will conſcionably, quietly, and patiently travel in your Orchard, God ſhall crown the labours of his hands with joyfulneſs, and make the Clouds drop fatneſs upon your Trees; he will provoke your love, and earn his Wages and Fees belonging to his place. The houſe being ſerved, fallen fruit, ſuperfluity of herbs, and flowers, ſeeds, graffs, ſets, and beſides all other of that fruit which your bountiful hand ſhall reward him withal, will much augment his wages, and the profit of your Bees will pay you back again.

If you be not able, nor willing to hire a Gardner, keep your profits to your ſelf, but then you muſt take all the pains; and for that purpoſe (if you want this Faculty) to inſtruct you, have I undertaken theſe labours, and gathered theſe Rules, but chiefly reſpecting my Countries good.

CHAP.

CHAP. II.
Of the Soil.

FRuit-trees moſt common, and meeteſt for our Northern-Countries; (as Apples, Pears, Cherries, Filbirds, Red and White, Plums, Damſons, Bullis) for we meddle not with Apricocks, nor Peaches, nor ſcarcely with Quinces, which will not like in our cold parts, unleſs they be helped with ſome reflect of the Sun, or other like means, nor with buſhes bearing berries, as Barberies, Gooſe-berries or Groſers, Raſp-berries, and ſuch like, though the Barbery be wholſome, and the Tree may be made great; do require (as all other Trees do) a black, fat, mellow, clean and well tempered ſoil, wherein they may gather plenty of good ſap. Some think the Hazel would have a chanily rock, and the Sallow, and Elder, a wateriſh mariſh. The ſoil is made better by delving, and other means, being well melted; and the wildneſs of the earth and weeds (for every thing ſubject to man, and ſerving his uſe, (not well ordered) is by nature ſubject to the curſe) is killed by froſt, and drought, by fallowing and laying on heaps; and if it be wild earth, with burning. *Kinds of trees.* *Soil.*

If your ground be barren, (for ſome are forced to make an Orchard of barren ground) make a pit three quarters deep, and two yards wide, and round in ſuch places where you would ſet your trees, and fill the ſame with fat, pure, and mellow earth, one whole foot higher than your ſoil, and therein ſet your plant. For who is able to manure a whole Orchard plot, if it be barren? But if you determine to manure the whole Site, this is your way; Dig a trench half a yard deep, all along the lower, (if there be a lower ſide of your Orchard plot) caſting up all the earth on the inner-ſide, and fill the ſame with good, ſhort, hot, and tender muck; and make ſuch another trench, and fill the ſame as the firſt, and ſo the third, and ſo throughout your ground; and by this means, your plot ſhall be fertil for your life. But be ſure you ſet your Trees neither in dung, nor barren earth. *Barren earth.*

You ground muſt be plain, that it may receive, and keep moiſture, not onely the rain falling thereon, but alſo water caſt upon it, or deſcending from higher ground, by Sluices, Conduits, *Plain.*

&c. For I account moiſture in Summer very needful in the ſoil of trees, and drought in Winter, provided that the ground be neither boggy, nor the inundation be paſt 24 hours at any time, and but twice in the whole Summer, and ſo oft in the Winter. Therefore, if your Plot be in a bank, or have a deſcent, make trenches by degrees, allyes, walks, and ſuch like, ſo as the water may be ſtayed from paſſage; and if too much water be any hindrance to your walks, (for dry walks do well become an Orchard, and an Orchard them) raiſe your walks with earth firſt, and then with ſtones as big as wall-nuts, and laſtly, with gravel. In Summer you need not doubt too much water from heaven, either to hurt the health of your body, or your trees. And if over-flowing moleſt you, after one day, avoid it then by deep trenching.

Moiſt.

Some for this purpoſe dig the ſoil of their Orchards, to receive moiſture, which I cannot approve: for the roots with digging are oftentimes hurt, and eſpecially, being digged by ſome unskilful Servant; for the Gardner cannot do all himſelf: And moreover, the Roots of Apples, and Pears, being laid near day, with the heat of the Sun, will put forth ſuckers, which are a great hindrance, and ſometimes with evil guiding, the deſtruction of trees, unleſs the delving be very ſhallow, and the ground laid very level again. Cherries, and Plums, without delving, will hardly, or never (after twenty years) be kept from ſuch ſuckers, nor Aſps.

Graſs alſo is thought needful for moiſture, ſo you let it not touch the Roots of your trees; for it will breed moſs; and the boal of your tree near the earth, would have the comfort of the Sun and Air.

Graſs.

Some take their ground to be too moiſt, when it is not ſo, by reaſon of water ſtanding thereon; for except in ſowr marſhes, ſprings, and continual over-flowings, no earth can be too moiſt. Sandy, and fat earth, will avoid all water falling, by receit: indeed, a ſtiff clay will not receive the water, and therefore, if it be graſſie, or plain, eſpecially hollow, the water will abide, and it will ſeem wateriſh, when the fault is in the want of manuring, and other good dreſſing.

This plainneſs, which we require, had need be natural, becauſe, to force any uneven ground, will deſtroy the fatneſs: for every

ſoil

ſoil hath his cruſt next day, wherein trees and herbs put their roots, and whence they draw their ſap, which is the beſt of the ſoil, and made fertil with heat and cold, moiſture and drought, and under which, by reaſon of the want of the ſaid temperature, by the ſaid four qualities, no tree nor herb (in a manner) will or can put root; as may be ſeen, if in digging your ground, you take the weeds of moſt growth, as graſs, or docks, (which will grow, though they lye upon the earth bare) yet bury them under the cruſt, and they will ſooner dye, and periſh, and become manure to your ground. This cruſt is not paſt 15 or 18 inches deep in good ground, or other grounds leſs. Hereby appears the fault of forced plains, viz. your cruſt in the lower parts is covered with the cruſt of the higher parts, and both with worſe earth: your heights having the cruſt taken away, are become meerly barren; ſo that either you muſt force a new cruſt, or have an evil ſoil. And be ſure you level before you plant, leſt you be forced to remove, or hurt your plants by digging, and caſting among their roots. Your ground muſt be cleared, as much as you may, of ſtone, and gravel, walls, hedges, buſhes, and other weeds.

Naturally plain.

Cruſt of the earth.

CHAP. III.

Of the Site.

THere is no difference, that I find, betwixt the neceſſity of a good Soil, and a good Site of an Orchard: For a good Soil (as is before deſcribed) cannot want a good Site; and if it do, the fruit cannot be good; and a good Site will much amend an evil Soil. The beſt Site is in low grounds, and (if you can) near unto a River. High grounds are not naturally fat.

Low, and near a River.

And if they have any fatneſs by man's hand, the very deſcent in time doth waſh it away. 'Tis with Grounds in this caſe, as it is with Men in a Common-wealth: Much will have more; and, once Poor, ſeldome or never Rich. The Rain will ſcind and waſh, and the Wind will blow fatneſs from the heights to the hollows, where it will abide, and fatten the earth, though it were barren before.

Hence it is, that we have ſeldome any plain grounds, and low, a barren, and as ſeldome any heights naturally fertil. It is

unſpeakable, what fatneſs is brought to low grounds, by inundations of waters; neither did I ever know any barren ground in a low plain by a River ſide. The goodneſs of the ſoil in *Howle*, or *Hollowderneſs* in *York-ſhire*, is well known to all that know the River *Humber*, and the huge bulks of their Cattel there. By eſtimation of thoſe that have ſeen the low grounds in *Holland*, and *Zealand*, they far ſurpaſs moſt Countries in *Europe* for fruitfulneſs, and onely becauſe they lye ſo low. The world cannot compare with *Egypt* for fertility, ſo far as *Nilus* doth overflow his banks: So that a fitter place cannot be choſen for an Orchard, than a low plain by a River ſide. For beſides the
Pſal. 1. 3. fatneſs which the water brings, if any cloudy miſt, or rain be ſtir-
Ezek. 17. 8. ing, it commonly falls down to, and follows the courſe of the
Eccluſ. 39. 17. River: And where ſee we greater Trees of bulk and bough, than ſtanding on, or near the water-ſide? If you ask why the plains in *Holderneſs*, and ſuch Countries, are deſtitute of wood? I anſwer, that men and cattel (that have put trees thence, from
Mr. *Markham.* out of plains to void corners) are better than trees. Neither are thoſe places without trees. Our old Fathers can tell us how woods are decayed, and people in the room of trees multiplied. I have ſtood ſomewhat long in this point, becauſe ſome do condemn a moiſt ſoil for fruit-trees.

Winds. A low ground is good to avoid the danger of winds, both for
Chap. 13. ſhaking down your unripe fruit. Trees (the moſt that I know) being loaden with wood for want of proyning, and growing high by the unskilfulneſs of the Arboriſt, muſt needs be in continual danger of the South-weſt, Weſt, and North-weſt winds, eſpecially in *September*, and *March*, when the Air is moſt temperate from extreme heat and cold, which are deadly enemies to great winds. Wherefore, chuſe your ground low: Or, if you be forced to plant in a higher ground, let high and ſtrong walls, houſes, and trees, as Wall-nuts, Plane-trees, Oaks and Aſhes, placed in good order, be your fence for winds.

The ſucken of your Dwelling-houſe, deſcending into your Orchard, if it be cleanly conveyed, is good.

Sun. The Sun, in ſome ſort, is the life of the world: it maketh proud growth, and ripens kindly and ſpeedily, according to the Golden tearm, *Annus fruktifieat, non tellus.* Therefore, in the Countries

Countries nearer approaching the Zodiack, the Suns habitation, they have better and sooner ripe fruit, than we that dwell in these frozen parts.

This provoketh most of our great Arborists to plant Apricocks, Cherries, and Peaches, by a wall, and with tacks, and other means to spread them upon, and fasten them to a wall, to have the benefit of the immoderate reflex of the Sun, which is commendable, for the having of fair, good, and soon ripe fruit. But let them know, it is more hurtful to the trees than the benefit they reap thereby, as not suffering a tree to live the tenth part of his age; it helps Gardeners to work. For first, the wall hinders the roots; because into a dry or hard wall of earth or stone, a tree will not, nor cannot, put any root to profit, but especially it stops the passage of the sap, whereby the bark is wounded, and the wood and diseases grow, so that the tree becomes short of life. For as in the body of man, the leaning or lying on some member, whereby the course of bloud is stopt, makes that member as it were dead for the time, till the bloud return to his course, and I think, if that stopping should continue any time, the member will perish for want of bloud, (for the life is in the blood) and so indanger the body; so the sap is the life of the tree, as the bloud is to man's body: neither doth the tree in winter (as is supposed) want his sap, no more than man's body his bloud, which in winter, and time of sleep, draws inward: so that the dead time of winter, to a tree, is but a night of rest: for the tree at all times, even in winter, is nourish'd with sap and growth as well as man's body. The chilling cold may well some little time stay or hinder the proud course of the sap, but so little and so short a time, that in calm and mild seasons, even in the depth of winter, if you mark it, you may easily perceive the sap to put out, and your trees to increase their buds which were formed in the Summer before, and may easily be discerned; for leaves fall not off, till they be thrust off with the knots or buds, whereupon it comes to pass, that trees cannot bear fruit plentifully two years together, and make themselves ready to blossom against the seasonableness of the next Spring. Trees against a wall.

And if any frost be so extreme, that it stay the sap too much, or too long, then it kills the forward fruit in the bud, and sometimes

times the tender leaves and twigs, but not the tree: Wherefore to return, it is perilous to ſtop the ſap. And where, or when did you ever ſee a great tree packt on a wall? Nay, who did ever know a tree ſo unkindly ſplat, come to age? I have heard of ſome that out of their imaginary cunning, have planted ſuch trees on the North ſide of the wall, to avoid drought: but the heat of the Sun is as comfortable (which they ſhould have regarded) as the drought is hurtful. And although water is a ſovereign remedy againſt drought, yet want of Sun is no way to be helped. Wherefore, to conclude this Chapter, let your ground lie ſo, that it may have the benefit of the South and Weſt Sun, and ſo low and cloſe, that it may have moiſture, and increaſs his fatneſs, (for trees are the greateſt ſuckers and pillers of the earth) and (as much as may be) free from great winds.

CHAP. IV.
Of the Quantity.

IT would be remembred what a benefit riſeth, not onely to every particular owner of an Orchard, but alſo to the common wealth by fruit, as ſhall be ſhew'd in the ſixteenth Chapter (God willing); whereupon muſt needs follow, the greater the Orchard is (being good, and well kept) the better it is: for of good things, being equally good, the biggeſt is the beſt. And if it ſhall appear, that no ground a man occupieth (no not the Corn-field) yieldeth more gain to the purſe, and houſe-keeping (not to ſpeak of the unſpeakable pleaſure) quantity for quantity, than a good Orchard, (beſides, the coſt in planting and dreſſing an Orchard is not ſo much by far, as the labour and ſeeding of your Corn-fields, nor for durance of time comparable, beſides the certainty of the one before the other) I ſee not how any labour or coſt in this kind, can be idely or waſtefully beſtowed, or thought too much. And what other thing is a Vineyard, in thoſe Countries where Vines do thrive, than a large Orchard of trees bearing fruit; or what difference is there in the juice of the Grape, and our Sider and Perry, but the goodneſs of the ſoil and clime where they grow? which maketh the one more ripe, and ſo more pleaſant than the other. Whatſoever can be ſaid for the

Orchard as good as a Corn-field.

Compared with a Vineyard.

the benefit riſing from an Orchard, that makes for the largeneſs of the Orchard bounds. And me thinks they do prepoſterouſly, that beſtow moſt coſt and labour, and more ground in and upon a Garden, then upon an Orchard, whence they reap and may reap both more pleaſure and more profit, by infinite degrees. And further, that a Garden never ſo freſh, and fair, and well kept, cannot continue without both renewing of the earth and the herbs often, in the ſhort and ordinary age of a man: whereas your Orchard well kept, ſhall dure divers hundred years, as ſhall be ſhewed Chap. 14. In a large Orchard there is much labour ſaved, in fencing and otherwiſe: for three little Orchards or a few trees, being in a manner all out-ſides, are ſo blaſted and dangered, and commonly in keeping neglected, and require a great fence; whereas in a great Orchard, trees are a mutual fence one to another, and the keeping is regarded; and leſs fencing ſerves ſix acres together, than three in ſeveral incloſures. Compared with a Garden

Now what quantity of ground is meeteſt for an Orchard, can no man preſcribe, but that muſt be left to every man's ſeveral judgment, to be meaſured according to his ability and will; for other neceſſaries beſides fruit muſt be had, and ſome are more delighted with Orchards than others. What quantity of ground.

Let no man, having a fit plot, plead poverty in this caſe; for an Orchard once planted, will maintain it ſelf, and yield infinite profit beſide. And I am perſuaded, that if men did know the right and beſt way of planting, dreſſing, and keeping trees, and felt the profit and pleaſure thereof, both they that have no Orchards would have them, and they that have Orchards would have them larger, yea fruit-trees in their hedges, as in *Worceſter-ſhire*, &c. And I think the want of planting is a great loſs to our Common-wealth, and in particular to the owners of Lordſhips, which Landlords themſelves might eaſily amend, by granting longer time and better aſſurance to their Tenants, who have taken up this Proverb, *Botch and ſit, Build and flit*: for who will build or plant for another man's profit? Or the Parliament might enjoyn every occupier of grounds to plant and maintain for ſo many acres of fruitful ground, ſo many ſeveral trees, or kinds of trees, for fruit. Thus much for quantity. What is no hindrance. How Landlords by their Tenants may make flouriſhing Orchards in *England*.

CHAP.

A. All theſe ſquares muſt be ſet with Trees, the Gardens and other Ornaments muſt ſtand in ſpaces betwixt the trees, and in the borders and fences.

B. Trees twenty yards aſunder.
C. Garden Knots.

D. Kitchin Garden.
E. Bridge.
F. Conduit.
G. Stairs.

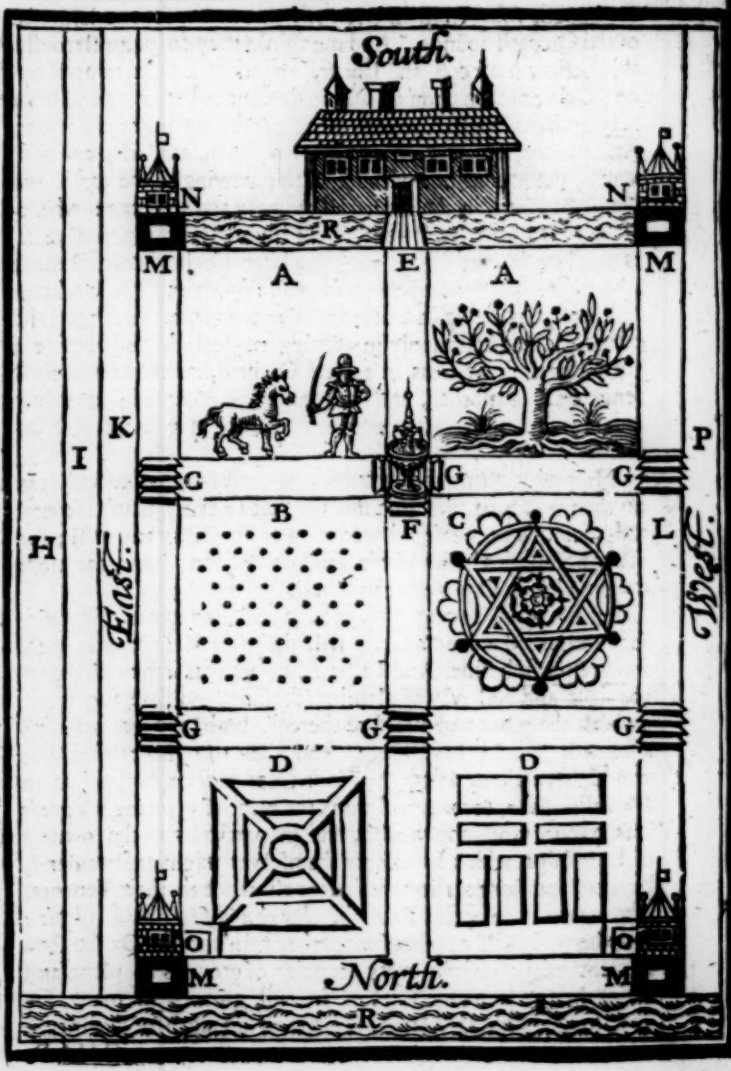
H. Walks ſet with great wood thick.
I. Walks ſet with great wood round about your Orchard

K. The Out-fence
L. The out-fence ſet with ſtone-fruit

M. Mount. To force earth for a Mount or ſuch like, ſet it round with quick, and lay boughs of trees ſtrangely intermingl'd, the tops inward, with the earth in the middle

N. Still-houſe.
O. Good ſtanding for Bees, if you have an houſe.

P. If the River run by your door, and under your Mount, it will be pleaſant,



CHAP. V.
Of the Form.

THe goodnesse of the soil and fire, are necessary to the well-being of an Orchard simply; but the form is so far necessary, as the owner shall think meet. For that kind of form wherewith every particular man is delighted, we leave it to himself, *Suum cuique pulchrum*. The form that men like in general, is a square: for although roundnesse be *forma perfectissima*, yet that principle is good, where necessity by art doth not force some other form. If within one large square, the Gardener shall make one round Labyrinth or Maze, with some kind of Berries, it will grace your form, so there be sufficient room left for walks, so will four or more round knots do, for it is to be noted, that the eye must be pleased with the form. I have seen squares rising by degrees, which stairs from your house-ward, according to this form which I have, *Crassa quod aiunt Minervâ*, with an unsteady hand, rough hewn: for in forming Country gardens, the better sort may use better forms, and more costly work. What is needful more to be said, I refer all that (concerning the form) to the Chapter 17. of the Ornaments of an Orchard.

The usual form is a square.

CHAP. VI.
Of Fences.

ALl your labour past and to come about an Orchard is lost, unless your fence well: It shall grieve you much to see your young sets rub'd loose at the Roots, the bark pild, the boughs and twigs crope, your fruit stolen, your Trees broken, and your many years labours and hopes destroyed, for want of fences. A chief care must be had in this point, you must therefore plant in such a soil, where you may provide a convenient, strong, and seemly fence. For you can possess no goods, that have so many enemies as an Orchard, look Chapter 13. Fruits are so delightsome, and desired of so many, (nay in a manner of all) and yet few will be at cost, and take pains to provide them. Fence well therefore, let your plot be wholly in your own power, that you

Effects of evil fencing.

Let the fence be your own.

make all your fence your self: for neighbours fence is none at all, or very careleſs. Take heed of a door or window, (yea of a wall) of any other man's into your Orchard, yea though it be nailed up, or the wall be high, for perhaps they will prove theeves.

Kinds of Fences earthen walls.

All fences commonly are made of Earth, Stone, Brick, Wood, or both earth and wood: Dry wall of earth, and dry ditches are the worſt fences: ſave pales or rails, and do waſt the ſooneſt, unleſs they be well chopt with Gloo and Morter, whereon at Michael-tide it will be good to ſow Wall-flowers, commonly called Bee-flowers, or winter Gilly-flowers, becauſe they will grow (though among ſtones) and abide the ſtrongeſt froſt and drought, continually green and flowering even in winter, and have a pleaſant ſmell, and are timely, (that is, they will flower the firſt and the laſt of flowers) and are good for Bees. And your earthen wall is good for bees, dry and warm, but theſe fences are both unſeemly, evil to repair, and only for need, where ſtone or wood cannot be had. Whoſoever makes ſuch walls, muſt not pill the ground in the Orchard, for getting earth, nor make any pits or hollows, which are both unſeemly and unprofitable: Old dry earth mixt with ſand is beſt for theſe. This kind of wall will ſoon decay by reaſon of the Trees which grow near it, for the roots and boals of great Trees, will increaſe, undermine, and over-turn ſuch walls, though they were of ſtone, as is apparent by Aſhes, Round-trees, Burt-trees, and ſuch like, carried in the chat, or berry, by birds into ſtone walls.

Pale & Rail.

Fences of dead wood, as pales, will not laſt, neither will rails either laſt or make good fence.

Stone walls.

Stone-walls (where ſtone may be had) are the beſt of this ſort, both for fencing, laſting, and ſhrowding of your young trees, but about this you muſt beſtow much Pains and more coſt, to have them handſome, high and durable.

Quick wood and Moats.

But of all other (in mine opinion) Quick wood and moats, or ditches of water, where the ground is Level, is the beſt fence: In unequal grounds, which will not keep water, there a double ditch may be caſt, made ſtreight and Level on the top two yards broad for a fair walk, five or ſix foot higher than the ſoil, with a gutter on either ſide, two yards wide and four foot deep, ſet without with three or four chefs of thorns, and within with Cherries,

Plums,

Plums, Damsons, Bullis, Filbirds, (for I love those trees better for their fruit, and as well for their form, as Privit,) for you may make them take any form. And in every corner, (and middle if you will) a mount would be Raised, whereabout the wood may claspe, poudered with wood-bind, which will make with dressing a fair, pleasant, profitable, and sure fence. But you must be sure that your quick thorns either grow wholly, or that there be a supply betimes, either planting new, or plashing the old, where need is. And assure your self, that neither wood, stone, earth, nor water, can make so strong a fence as this, at seven years growth.

Moats. Moats, Fish-ponds, and (especially at one side a River) within and without your fence, will afford you Fish, fence, and moisture to your Trees, and pleasure also, if they be so great and deep that you may have Swans, and other sweet Birds, good for devouring of Vermine, and boat for many good uses.

It shall hardly avail you to make any fence for your Orchard, if you be a niggard of your fruit. For as Liberality will save it best from noisome neighbours, (Liberality I say is the best fence) so justice must restrain Rioters. Thus when your ground is tempered, squared, and fenced, it is time to provide for planting.

CHAP. VII.
Of Sets.

THere is not one point (in my Opinion) about an Orchard more to be regarded, than the choise getting and setting of good plants, either for readiness of having good fruit, or for continual lasting, for whosoever shall fail in the choice of good sets, or in getting, or gathering, or setting his plants, shall never have a good or lasting Orchard. And I take want of skil in this faculty, to be a chief hinderance to the most Orchards, and to many for having Orchards at all.

Slips. Some for Readiness use Slips, which seldom take Root, and if they do take, they cannot last, both because their Root having a main wound will in short time decay the body of the Tree: and besides, that Roots being so weakly put, are soon nipt with drought or frost. I could never see (rightly) any Slip, but of apples onely, set for Trees.

Bur-knot.

A Bur-knot kindly taken from the Apple-tree, is much better and surer. You must cut him close at the Root-end, an handful under the knot, (some use in Summer about *Lammas*, to circumcise him and put earth to the knots with hay-Ropes, and in winter cut him off and set him: but this is curiosity needless, and danger with removing and drought) and cut away all his twigs save one, the most principal; which in setting you must leave above the earth, butting his trunk in the crust of the earth for his Root. It matters not much what part of the bough the twigs grow out of; if it grow out of, or near the Root end, some say such an apple will have no core nor kernel. Or if it please the planter he may let his bough be crooked, and leave out his top end one foot, or somewhat more, wherein will be good grafting; if either you like not or doubt the fruit of the bough, (for commonly your bur-knots are Summer-fruit) or if you think he will not recover his wound safely.

Usual sets.

The most usual kind of Sets, are plants with Roots growing of kernels of Apples, Pears, and Grabbs, or stones of Cherries, Plums, &c. removed out of a nursery, wood, or other Orchard; into, and set in your Orchard in due places: I grant this kind to be better than either of the other by much, as more sure and more durable. Herein you must note, that in Sets so removed, you get all the Roots you can, and without bruising of any, I utterly dislike the opinion of those great Gardeners, that following their books, would have the main Roots cut away; for tops cannot grow without Roots, and because none can get all the Roots, and removal is an hinderance, you may not leave on all tops, when you set them; for there is a proportion betwixt the Top and Root of a Tree, even in the number, (at least in the growth) If the Roots be many, they will bring you many Tops, if they be not hindered. And if you use to stow or top your tree too much or too low, and leave no issue, or little for sap, (as is to be seen in your hedges) it will hinder the growth of Roots and boal, because such a kind of stowing is a kind of smoothering or choaking the sap. Great Wood, as Oak, Elm, Ash, &c. being continually kept down with sheer, knife, ax, &c. neither boal nor Root will thrive, but as an hedge or bush. If you intend no graft in your sets, you may cut him closer with a greater wound, and nearer the earth

Main Roots cut.

Stow sets removed.

within a foot or two, becauſe the graft or grafts will cover his wound. If you like his fruit, and would have him to be a Tree of himſelf, but not ſo bolt. This I can tell you, that though you do cut his top cloſe, and leave nothing but his bulk, becauſe his roots are few, if he be (but little) bigger than your thumb, (as I wiſh all plants removed to be) he will ſafely recover his wound within ſeven years, by good guidance, that is, the next time of dreſſing, immediately above his uppermoſt ſprig, you cut him off a ſlope cleanly, ſo that the ſprig ſtand on the back ſide, (and if you can Northward, that the wound may have the benefit of the Sun) at the upper end of the wound, and let the ſprig onely be the boal. And take this for a general rule; Every young plant, if he thrive, he will recover any wound above the earth, by good dreſſing, although it be to the one half, and to his very heart. This ſhort cutting at the remove, ſaves your plants from wind, and needs the leſs or no ſtaking: I commend not lying or leaning of Trees againſt holds or ſtays, for it breeds obſtruction of ſap, and wounds incurable. All removing of Trees as great as your arm, or above, is dangerous, though ſome time ſuch will grow, but not continue long, becauſe they be tainted with deadly wounds, either in the Root or top, (and a Tree once thorowly tainted, is never good) And though they get ſome hold in the earth with ſome leſſer taw or taws, which give ſome nouriſhment to the body of the Tree, yet the heart being tainted, he will hardly ever thrive; which you may eaſily diſcern by the blackneſs of the boughs at the heart, when you dreſs your trees. Alſo when he is ſet with more tops than the Roots can nouriſh; the tops decaying blacken the boughs, and the boughs the arms, and ſo they boil at the very heart. Or this taint in the removal, if it kill not preſently, but after ſome ſhort time, it may be diſcerned, black, or yellowiſh in the bark, and a ſmall hungred leaf. Or if your removed plant put forth leaves the next and ſecond Summer, and a little or few ſpraſes, is a great ſign of a taint, and next years death. I have known a tree tainted in ſetting, yet grow, and bear bloſſoms for divers years, and yet for want of ſtrength could never ſhape his fruit.

General rule.

Tying of trees

General rule

Signs of diſeaſe, chap. 13.

Next unto this, or rather equal with theſe plants, are ſuckers growing out of the Roots of great Trees, which Cherries and Plums

Suckers good ſets.

Plums do seldome or never want, and being taken kindly with their Roots, will make very good sets. And you may help them much by enlarging their Roots, with the tawes of the tree, whence you take them. They are of two sorts; either growing from the very Root of the Tree; and here you must be careful, not to hurt your Tree when you gather them, by Ripping amongst the Roots, and that you take them cleah away: for these are a great and continual anoiance to the growth of your Tree, and they will hardly be cleansed. Secondly, or they do arise from some taw: and these may be taken without danger, with long and good Roots, and will soon become Trees of strength.

A Running Plant.

There is another way, which I have not thorowly proved, to get not only plants for grafting, but sets to remain for Trees, which I call a *Running plant*, the manner of it is this: Take a root or kernel, & put into the middle of your plot, and the second year in the spring, geld his top, if he have one principal, (as commonly by nature they have) and let him put forth only four Cyens toward the four corners of the Orchard, as near the earth as you can. If he put not four (which is rare) stay his top till he have put so many. When you have four such, cut the stock a slope, as is aforesaid in this Chapter, hard above the uppermost sprig, and keep those four without Cyens clean and streight till you have them a yard and a half, at least, or two yards long. Then the next spring, in grafting time, lay down those four sprays, towards the four corners of your Orchard, with their tops in a heap of pure and good earth, and raised as high as the Root of your Cyen, (for sap will not descend) and a sod to keep them down, leaving nine or twelve inches of the top to look upward. In that hill he will put Roots, and his top new Cyens, which you must spread as before, and so from hill to hill, till he spread the compass of your ground, or as far as you list. If in bending the Cyens crack, the matter is small; cleanse the ground, and he will recover. Every bended bough will put forth branches, and become Trees. If this plant be of a bur knot, there is no doubt; I have proved it in one branch my self, and I know at *Wilton* in *Cleveland*, a Pear-Tree of a great bulk and age, blown close to the earth, hath put at every knot Roots into the earth, and from Root to top, a great number of mighty arms or Trees, filling a great Room, like many Trees, or

a little Orchard; much better may it be done by Art, in a leſs Tree. And I cold not miſlike this kind; ſave that time will be long before it come to perfection.

Many uſe to buy ſets already grafted, which is not the beſt way: for firſt all removes are dangerous: Again there is danger in the carriage: Thirdly, it is a coſtly courſe of planting: Fourthly, every Gardener is not truſty to ſell you good fruit: Fifthly, you know not which is beſt, which is worſt, and ſo may take moſt care about your worſt Trees. Laſtly, this way keeps you from practice, and ſo from experience, in ſo Good, Gentlemanly, Scholar-like, and profitable a faculty. Set bonghs.

The only beſt way (in my opinion) to have ſure and laſting ſets, is never to remove: for every remove is a hinderance, if not a dangerous hurt, or deadly taint. This is the way, the platform being laid, and the plot appointed where you will plant every ſet in your Orchard, dig the room where your ſet ſhall ſtand, a yard compaſs, and make the earth mellow and clean, and mingle it with a few cole-aſhes, to avoid worms; and immediatly after the firſt change of the Moon, in the latter end of *February*, the earth being a freſh turned over, put in every ſuch room three or four kernels of Apples or Pears of the beſt; every kernel in an hole made with your finger, finger-deep, a foot diſtanc one from another, and that day month following, as many more, (leſt ſome of the former miſs) in the ſame compaſs, but not in the ſame holes. Hence (God willing) ſhall you have roots enough: If they all or divers of them come up, you may draw (but not dig) up (not put down) at your pleaſure, the next *November*. How many ſoever you take away, to give or beſtow elſewhere, be ſure to leave two of the proudeſt. And when in your ſecond or third year you graff, if you graff then at all, leave the one of thoſe two ungrafted, leſt in graffing the other, you fail. For I find by tryal, that after the firſt or ſecond graffing in the ſame ſtock being miſt, (for who hits all) the third meſs puts your ſtock in deadly danger, for want of iſſue of ſap. Yet, though you hit in graffing, yet may your graffs with wind or otherwiſe be broken down. If your graffs or graff proſper, you have your deſire, in a plant unremoved, without taint, and the fruit at your own choice: and ſo you may, (ſome little earth being removed) pull but not dig The beſt ſets unremoved how.

up

up the other plant or plants in that room. If your graff or ſtock, or both periſh, you have another in the ſame place, of better ſtrength to work upon, for thriving without ſnub, he will over-lay your graſted ſtock much. And it is hardly poſſible to miſs in graffing ſo often, if your Gardiner be worth his name.

Sets ungrafted beſt of all.

It ſhall not be amiſs, (as I judge it) if your kernels be of choice fruit, and that you ſee them come forward proudly in their body, and bear a fair and broad leaf, in colour tending to a greeniſh yellow, (which argues pleaſant & great fruit) to try ſome of them ungraffed: for although it be a long time ere this come to bear fruit, ten or twelve years, or more, and at their firſt bearing, the fruit will not ſeem to be like his own kind, yet am I aſſured upon Trial, before twenty years growth, ſuch Trees will increaſe the bigneſs and goodneſs of their fruit, and come perfectly to their own kind. Trees (like other breeding creatures) as they grow in years, bigneſs, and ſtrength, ſo they mend their fruit. Husbands and houſewives find this true by experience, in the rearing of their young ſtore. More than this, there is no Tree like this for ſoundneſs, and durable laſt, if his keeping and dreſſing be anſwerable. I grant, the readieſt way to come ſoon to fruit, is graffing; becauſe, in a manner, all your graffs are taken off fruit-bearing Trees.

Time of removing.

Now, when you have made choice of your ſets to remove, the ground being ready, the beſt time is, immediatly after the fall of the Leaf, in or about the change of the Moon, when the ſap is moſt quiet, for then the ſap is turning: for it makes no ſtay, but in the extremity of drought or cold: At any time in winter, may

General rule.

you tranſplant Trees, ſo you put no ice nor ſnow to the Root of your plant in the ſetting: and therefore open, calm, and moiſt weather is beſt. To remove, the Leaf being ready to fall, and not fallen, or buds apparently put forth in a moſt warm ſeaſon, for need, ſometime may do well; but the ſafeſt is to walk in the plain troden path.

Some hold Opinion, that it is beſt removing before the fall of the Leaf, and I hear it is commonly practiſed in the South by our beſt Arboriſts, the leaf not fallen; & they give the reaſon to be, that the deſcending of the ſap will make ſpeedy Root. But mark the Reaſons following, and I think you ſhall find no ſoundneſs either

in

in that poſition or practice, at leaſt in the reaſon.

1. I ſay it is dangerous to remove when the ſap is not quiet; for every remove gives a main check to the ſtirring ſap, by ſtaying the courſe thereof in the body of your Plant, as may appear by trees removed any time in Summer, they commonly die, nay hardly ſhall you ſave the life of the moſt young and tender plant of any kind of wood (ſcarcely herbs) if you remove them in the pride of ſap; for proud ſap univerſally ſtaid by removal, ever hinders, often taints, and ſo preſently, or in very ſhort time, kills. Sap is like bloud in man's body, in which is the life, Chap. 3. page 9. if the bloud univerſally be cold, life is excluded; ſo is ſap tainted by untimely removal. A ſtay by drought, or cold, is not ſo dangerous, (though dangerous, if it be extreme) becauſe more natural.

2. The ſap never deſcends, as men ſuppoſe; but is conſolidated and tranſubſtantiated into the ſubſtance of the tree, and paſſeth (always above the earth) upward, not onely betwixt the bark and the wood, but alſo into and in both body and bark, though not ſo plentifully, as may appear by a tree budding, nay fructifying two or three years, after he be circumciſed, at the very root, like a River that enlargeth his channel by a continual deſcent.

3. I cannot perceive what time they would have the ſap to deſcend. At *Midſummer* in a biting drought it ſtays, but deſcends not; for immediately upon moiſture it makes ſecond ſhoots, at (or before rather) *Michaeltide*, when it ſhapens his buds for next years fruit. If at the fall of the leaf, I grant, about that time is the greateſt ſtand, but no deſcent of ſap, which begins ſomewhat before the leaf fall, but not long; therefore at that time muſt be the beſt removing, not by reaſon of deſcent, but ſtay of ſap.

4. The ſap in this courſe hath its profitable and apparent effects; as the growth of the tree, covering of wounds, putting of buds, &c. Whereupon it follows, if the ſap deſcend, it muſt needs have ſome effect to ſhew it.

5. Laſtly, boughs plaſh'd and laid lower than the root, die for want of ſap deſcending, except where it is forced by the main ſtream of the ſap, as in top boughs hanging like water in pipes, or except the plaſht boughs lying on the ground put roots of his own; yea under-boughs, which we commonly call water-boughs

can ſcarcely get ſap to live, yea in time die, becauſe the ſap doth preſs ſo violently upward, and therefore the faireſt ſhoots and fruits are always in the top.

Remove ſoon. *Object.* If you ſay that many ſo removed thrive; I ſay, that ſomewhat before the fall of the leaf (but not much) is the ſtand; for the fall and the ſtand are not at one inſtant; before the ſtand, is dangerous. But to return.

The ſooner in Winter you remove your ſets, the better; the latter, the worſe; for it is very perillous if a ſtrong draught take your ſets before they have made good their rooting. A plant ſet at the fall, ſhall gain (in a manner) a whole years growth of that which is ſet in the Spring after.

The manner of ſetting. I uſe in the ſetting to be ſure that the earth be mouldy, (and ſomewhat moiſt) that it may run among the ſmall tangles without ſtraining or bruiſing; and as I fill in earth to his root, I ſhake the Set eaſily too and fro, to make the earth ſettle the better to his roots; and withal eaſily with my foot I put in the earth cloſe, for air is noiſome, and concavities will follow. Some preſcribe Oats to be put in with the earth: I could like it, if I could know any reaſon thereof. And they uſe to ſet their plants with the ſame ſide towards the Sun; but this conceit is like the other. For firſt, I would have every tree to ſtand ſo free from ſhade, that not onely the root (which therefore you muſt keep bare from graſs) but body, boughs, and branches, and every ſpray, may have the benefit of the Sun. And what hurt, if that part of the tree which before was ſhadowed, be now made partaker of the heat of the Sun? In turning of Bees, I know it is hurtful, becauſe it changeth their entrance, paſſage, and whole work, but not ſo in trees.

Set in the cruſt. Set as deep as you can, ſo that in any wiſe you go not beneath the cruſt. Look Chap. 2.

Moiſture good We ſpake in the ſecond chapter of moiſture in general; but now eſpecially having put your removed plant into the earth, pour on water (of a puddle were good) by diſtilling preſently, and ſo every week twice, in ſtrong drought, ſo long as the earth will drink, and refuſe by over-flowing. For moiſture mollifies, and both gives leave to the root to ſpread, and makes the earth yield ſap and nouriſhment with plenty and facility. Nurſes, they

(they ſay) give beſt and moſt milk after warm drinks.

If your ground be ſuch, that it will keep no moiſture at the root of your plant, ſuch plants ſhall never like, or but for a time. There is nothing more hurtful for young trees, than piercing drought. I have known trees of good ſtature, after they have been of divers years growth, and thrive well for a good time, periſh for want of water, and very many by reaſon of taints in ſetting.

It is meet your ſets and graffs be fenced, till they be as big as your arm, for fear of annoiances. Many ways may ſets receive dammages, after they be ſet, whether graffed or ungraffed. For although we ſuppoſe, that no noiſome beaſt or other thing muſt have acceſs among your trees; yet by caſualty, a Dog, Cat, or ſuch like, or your ſelf, or negligent friend bearing you company, or a ſhrewd boy, may tread or fall upon a young and tender plant or graff. To avoid theſe and many ſuch chances, you muſt ſtake them round a pretty diſtance from the ſet, neither ſo near nor ſo thick, but that it may have the benefit of the Sun, Rain, and Air. Your ſtakes (ſmall or great) would be ſo ſurely put, or driven into the earth, that they break not, if any thing happen to lean upon them, elſe may the fall be more hurtful than the want of the fence. Let not your ſtakes ſhelter any weeds about your ſets; for want of Sun is a great hindrance. Let them ſtand ſo far off, that your graffs ſpreading receive no hurt, either by rubbing on them, or of any other paſſing by. If your ſtock be long, and high graffed, (which I muſt diſcommend, (except in need) becauſe there the ſap is weak, and they are ſubject to ſtrong winds, and the lightings of birds) tie eaſily with a ſoft liſt three or four pricks, under the clay, and let their tops ſtand above the graffs to avoid the lighting of Crows, Pies, &c. upon your graffs. If you ſtick ſome ſharp thorns at the root of your ſtalks, they will make hurtful things keep off the better. Other better fences for your graffs I know none. And thus much for Sets and Setting.

Graffs muſt be fenced.

CHAP. VIII.

Of the diſtance of Trees.

I Know not to what end you ſhould provide good ground, well fenced, and plant good ſets, and when your trees ſhould come

to profit, have all your labours loſt, for want of due regard to the diſtance of placing your trees. I have ſeen many trees ſtand ſo thick, that one could not thrive for the throng of his neighbours. If you do mark it, you ſhall ſee the tops of trees rubbed off, their ſide gall'd like a gall'd horſe back; and many trees have more ſtumps than boughs, and moſt trees not well thriving, but ſhort, ſtumpiſh, and evil-thriving boughs; like a Corn-field over-ſeeded, or a Town over-peopled, or a Paſture over-laid; which the Gardener muſt either let grow, or leave the tree very few boughs to bear fruit. Hence ſmall thrift, galls, wounds, diſeaſes, and ſhort life to the trees; and, while they live, green, little, hard, worm-eaten, and evil-thriving fruit, ariſe, to the diſcomfort of the Owners.

Hurts of too near planting.

To prevent which diſcommodity, one of the beſt remedies is, the ſufficient and fit diſtance of trees. Therefore at the ſetting of your plants, you muſt have ſuch reſpect, that the diſtance of them be ſuch, that every tree be not annoiance, but an help, to his fellows; for trees (as all other things of the ſame kind) ſhould ſhrond, and not hurt one another. And aſſure your ſelf, that every touch of trees (as well under as above) is hurtful: Therefore this muſt be a general rule in this Art, that no tree in an Orchard well ordered, or no bough, nor eyen, drop upon or touch his fellows. Let no man think this impoſſible, but look in the eleventh Chapter of dreſſing of trees. If they touch, the wind will cauſe a forcible rub. Young twigs are tender, if boughs or arms touch or rub, if they are ſtrong, they make great galls. No kind of touch therefore in trees can be good.

General rule, All touches hurtful.

Now it is to be conſider'd what diſtance among Sets is requiſite, and that muſt be gather'd from the compaſs and room that each tree by probability will take and fill. And herein I am of contrary opinion to all them which practiſe or teach the planting of trees, that ever yet I knew, read, or heard of: for the common ſpace between tree and tree, is ten; if twenty foot, it is thought very much. But I ſuppoſe twenty yards diſtance is ſmall enough betwixt tree and tree, or rather too too little. For the diſtance muſt needs be as far as two trees are well able to overſpread and fill, ſo they touch not by one yard at the leaſt. Now I am aſſured, and I know one Apple tree, ſet of a ſlip *finger great*, a

The beſt diſtance of trees

in

in the ſpace of twenty years (which I account a very ſmall part of a trees age, as is ſhewed Chapter 14.) hath ſpread his boughs eleven or twelve yards compaſs; that is, five or ſix yards on every ſide. Hence I gather, that in forty or fifty years (which yet is but a ſmall time of his age) a tree in good ſoil, well liking, by good dreſſing (for that is much available to this purpoſe) will ſpread double at the leaſt, *viz.* twelve yards on a ſide; which being added to twelve allotted to his fellow make twenty and four yards, and ſo far diſtant muſt every tree ſtand from another. And look how far a tree ſpreads his boughs above, ſo far doth he put his roots under the earth, or rather further, if there be no ſtop nor let by walls, trees, rocks, barren earth, and ſuch like: for an huge bulk, and ſtrong arms, maſſie boughs, many branches, and infinite twigs, require wide ſpreading roots. The top hath the vaſt air to ſpread his boughs in, high and low, this way and that way; but the roots are kept in the cruſt of the earth, they may not go downward, nor upward out of the earth, which is their element, no more than the Fiſh out of the water, Camelion out of the air, nor Salamander out of the fire. Therefore they muſt needs ſpread far under the earth. And I dare well ſay, if nature would give leave to man, by Art to dreſs the roots of trees to take away the raws, and tangles that lap and fret, and grow ſuperfluouſly and diſorderly, (for every thing *ſublunary* is curſed for man's ſake) the tops above being anſwerably dreſſed, we ſhould have trees of wonderful greatneſs, and infinite durance. And I perſuade my ſelf that this might be done ſometimes in winter, to trees ſtanding in fair plains and kindly earth, with ſmall or no danger at all. So that I conclude, that twenty four yards is the leaſt ſpace that Art can allow for trees to ſtand diſtant one from another.

The parts of a tree.

If you ask me what uſe ſhall be made of that waſte ground betwixt tree and tree: I anſwer, if you pleaſe to plant ſome tree or trees in that middle ſpace, you may; and as your trees grow contiguous, great and thick, you may at your pleaſure take up thoſe laſt trees. And this I take to be the chief cauſe why the moſt trees ſtand ſo thick; for men not knowing (or not regarding) this ſecret of needful diſtance, and loving fruit

Waſt grounds in an Orchard

fruit of trees planted to their hands, think much to pull up any, though they pine one another. If you or your heirs or ſucceſſors would take up ſome great trees (paſt ſetting) where they ſtand too thick, be ſure to do it about *Midſomer*, and leave no main Roots. I deſtinate the ſpace of four and twenty yards, for trees of age and ſtature. More than this, you have borders to be made for walks, with Roſes, Berries, &c.

And chiefly conſider, that your Orchard, for the firſt twenty or thirty years, will ſerve you for many Gardens; for Saffron, Licoras, Roots, and other herbs for profit, and flowers for pleaſure: ſo that no ground need be waſted if the Gardener be skilful and diligent. But be ſure you come not near with ſuch deep delving the roots of your trees, whoſe compaſs you may partly diſcern, by the compaſs of the tops, if your top be well ſpread. And under the droppings and ſhadow of your trees, be ſure no herbs will like. Let this be ſaid for the diſtance of Trees.

CHAP. IX.

Of the placing of Trees.

THe placing of Trees in an Orchard is worth the regard: For although it muſt be granted, that any of our foreſaid Trees (Chap. 2.) will like well in any part of your Orchard, being good and well dreſt earth; yet are not all trees alike worthy of a good place. And therefore I wiſh that your Filberd, Plums, Damſons, Bulleſs, and ſuch like, be utterly removed from the plain ſoil of your Orchard into your fence: for there is not ſuch fertility and eaſeful growth, as within: and there alſo they are more ſubject to, and can abide the blaſts of *Æolus*. The Cherries and Plums being ripe in the hot time of Summer, and the reſt ſtanding longer, are not ſo ſoon ſhaken as your better fruit, neither, if they ſuffer loſs, is your loſs ſo great. Beſides that, your fences and ditches will devour ſome of your fruit growing in or near your hedges. And ſeeing the continuance of all theſe (except Nuts) is ſmall, the care of them ought to be the leſs. And make no doubt, but the fences of a large Orchard will contain a ſufficient number of ſuch kind of Fruit-trees in the whole compaſs. It is not material, but at your pleaſure, in the ſaid fences, you may either intermingle your

your ſeveral kinds of fruit-trees, or ſet every kind by it ſelf, order doth very well become your better and greater fruit. Let therefore your Apples, Pears, and Quinces poſſeſs the ſoil of your Orchard, unleſs you be eſpecially affected to ſome of your other kinds; and of them, let your greateſt trees of growth ſtand further from Sun, and your Quinces at the South ſide or end, and your apples in the middle: ſo ſhall none be any hinderance to his fellows. The Warden-tree, and Winter-pear, will challenge the preeminence for ſtature. Of your Apple-trees, you ſhall find a difference in growth. A good Pippin will grow large, and a Coſtard-tree: ſtead them on the North ſide of your other apples; thus being placed, the leaſt will give Sun to the reſt, and the greateſt will ſhroud their fellows. The fences and out-trees will guard all.

CHAP. X.

Of Graffing.

NOw are we come to the moſt curious point of our faculty, curious in conceit, but indeed as plain and eaſie as the reſt, when it is plainly ſhewn, which we commonly call Graf- *Of Graving or Carving.*

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fing or (after ſome) Grafting, I cannot Etymologize or ſhew the original of the word, except it come of Graving or Carving.

Graffing what. But the thing or matter is: The reforming of the fruit of one tree with the fruit of another, by an artificial tranſplacing or tranſpoſing of a twig, bud, or leaf, (commonly called a

A Graff. Graff) taken from one tree of the ſame, or ſome other kind, and placed or put to, or into another tree in one time and manner.

Kinds of graffing. Of this there be divers kinds, but three or four now eſpecially in uſe; to wit, Graffing, inciſing, packing on, graffing in the ſcutchion, or inoculating; whereof the chief and moſt uſual is called Graffing, (by the general name, κατ' ἐξοχὴν) for it is the moſt known, ſureſt, readieſt, and plaineſt way to have ſtore of good fruit.

Graff how. It is thus wrought; You muſt with a fine, thin, ſtrong, and ſharp Saw, made and armed for that purpoſe, cut off a foot above the ground, or thereabouts, in a plain without a knot, or as near as you can without a knot (for ſome ſtocks will be knotty) your Stock, Set, or Plant being ſurely ſtayed with your foot and leg; or otherwiſe ſtraight over-thwart (for the Stock may be crooked) and then plain his wound ſmoothly with a ſharp knife; that done, cleave him gently in the middle with a cleaver, and a knock or mall, and with a wedge of wood, iron, or bone, two handful long at leaſt, put in the middle of that clift, with the ſame knock, make the wound gape a ſtraw-breadth wide into which you muſt put your Graffs.

A graff what. The Graff is a top-twig taken from ſome other tree (for it is a folly to put a Graff into his own ſtock) beneath the uppermoſt (and ſometimes in need the ſecond) knot, and with a ſharp knife fitted in the knot (and ſometimes out of the knot when need is) with ſhoulders an inch downward, and ſo put into the ſtock with ſome thruſting (but not ſtraining) bark to bark inward.

Eyes. Let your Graff have three or four eyes for readineſs to put forth, and give iſſue to the ſap. It is not amiſs to cut off the top of your graff, and leave it but five or ſix inches long, becauſe commonly you ſhall ſee the tops of long Graffs die. The reaſon is this, the ſap in graffing receives a rebuke, and cannot work ſo ſtrongly preſently,

ſently, and your graffs receive not ſap ſo readily, as the natural branches. When your graffs are cleanly and cloſely put in, and your wedge pull'd out nimbly, for fear of putting your graffs out of frame, take well tempered morter, ſoundly wrought with chaff, or horſe-dung, (for the dung of Cattel will grow hard, and ſtrain your graffs) the quantity of a Gooſe egg, and divide it juſt, and therewithall cover your ſtock, laying the one half on the one ſide, and the other half on the other ſide of your graffs, (leſt thruſting again your graffs you move them) and let both your hands thruſt at once, and alike, and let your clay be tender, to yield eaſily; and all, leſt you move your graffs. Some uſe to cover the cleft of the ſtock under the clay, with a piece of bark or leaf, ſome with a ſear-cloath of wax, and butter, which, as they be not much needful, ſo they hurt not, unleſs that by being buſie about them, you move your graffs from their places. They uſe alſo moſs, tied on above the clay with ſome briar, wicker, or other bands: Theſe profit nothing. They all put the graffs in danger, with pulling, and thruſting: for I hold this general Rule in graffing, and planting; if your ſtock and graffs take, and thrive, (for ſome will take, and not thrive, being tainted by ſome means in the planting, or graffing) they will (without doubt) recover their wounds ſafely and ſhortly. General rule.

The beſt time of graffing, from the time of removing your ſtock, is the next Spring, for that ſaves a ſecond wound, and a ſecond repulſe of ſap, if your ſtock be of ſufficient bigneſs to take a graff from as big as your thumb, to as big as an arm of a man. You may graff leſs, (which I like) and bigger, which I like not ſo well. The beſt time of the year is in the laſt part of *February*, or *March*, or beginning of *April*, when the Sun with his heat begins to make the ſap ſtir more ſtrongly about the change of the Moon, before you ſee any great apparency of leaf or flowers, but onely knots and buds, and before they be proud, though it be ſooner: Cherries, Pears, Apricocks, Quinces, and Plums, would be gathered and graffed ſooner. Time of graffing.

The graffs may be gathered ſooner in *February*, or any time within a month or two before you graff, or upon the ſame day; (which I commend) If you get them any time before: for I Gathering of graffs.

have known graffs gathered in *December*, and do well, take heed of drought; I have my ſelf taken a burk, not of a Tree, and the ſame day when he was laid in the earth, about mid *February*, gathered graffs and put in him, and one of thoſe graffs bore the third year after, and the fourth plentifully; Graffs of old Trees would be gathered ſooner than of young Trees, for they ſooner break, and bud. If you keep graffs in the earth, moiſture with the heat of the Sun will make them ſprout as faſt, as if they were growing on the Tree. And therefore, ſeeing keeping is dangerous, the ſureſt way (as I judge) is, to take them within a week of the time of your graffing.

Graffs of old Trees.

The graffs would be taken not of the proudeſt twigs, for it may be your ſtock is not anſwerable in ſtrength. And therefore, (ſay I) the graffs brought from South to us in the North, although they take, and thrive, (which is ſomewhat doubtful, by reaſon of the difference of the clime, and carriage) yet ſhall they in time faſhion themſelves to our cold Northern ſoil, in growth, taſte, &c.

Where taken.

Nor of the pooreſt; for want of ſtrength may make them unready to receive ſap; (and who can tell but a poor graff is tainted) nor on the outſide of your Tree, for where ſhould your Tree ſpread, but in the middeſt: for there you may be ſure your Tree is no whit hindered in his growth, or form. He will ſtill recover inward, more than you would wiſh. If your clay clift in Summer with drought, look well in the Chinks for Emmets, and Earwigs, for they are cunning and cloſe thieves, about graffs; you ſhall find them ſtirring in the morning, and evening, and the rather, in the moiſt weather: I have had many young buds of Graffs, even in the flouriſhing, eaten with Ants. Let this ſuffice for graffing, which is in the faculty counted the chief ſecret, and becauſe it is moſt uſual, it is beſt known.

Emmets.

Graffs are not to be diſliked for growth, till they wither, pine, and die. Uſually before *Midſummer* they break, if they live. Some (but few) keeping proud and green, will not put till the ſecond year, ſo is it to be thought of Sets.

The firſt ſhew of putting is no ſure ſign of growth, it is but the ſap the graff brought with him from his Tree.

So ſoon as you ſee the graff put forth growth, take away the clay, for then doth neither the ſtock nor the graff need it, (put a little

little fresh well tempered clay in the hole of the stock) for the clay is now tender, and rather keeps moisture than drought.

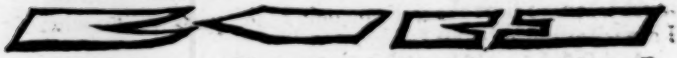
The other ways of changing the natural fruit of Trees, are more curious than profitable, and therefore I mind not to bestow much labour or time about them, only I shall make known what I have proved, and what I do think.

Inciſing. And first, of Inciſing, which is the cutting of the back of the boal, a Rine or Branch of a Tree, at some bending, or knee shoulderwise with two gashes, onely with a sharp Knife to the wood; then take a wedge, the bigness of your graff, sharp ended, flat on the one side, agreeing with the Tree, and round on the other side, and with that being thrust in, raise your bark, then put in your graff, fashioned like your wedge just: and lastly, cover your wound, and fast it up, and take heed of straining. This will grow but to small purpose, for it is weak hold, and lightly it will be under growth. Thus may you graff betwixt the bark and the Tree of a great stock, that will not easily be clifted. But I have tried a better way for great trees, viz. First, cut him off straight, and cleanse him with your Knife; then cleave him into four quarters equally with a strong cleaver: then take for every clift, two or three small (but hard) wedges, just of the bigness of your graffs, and with those wedges driven in with a hammer, open the four clifts so wide, (but no wider) that they may take your four graffs with thrusting, not with straining: And lastly, cover and clay it closely, and this is a sure and good way of graffing: or thus, clift your stock by his edges twice or thrice with your clever, and open him with your wedge in every clift one by one, and put in your graffs, and then cover them: This may do well. A great stock.

Packing thus. Packing on, is, when you cut aslope, a twig of the same bigness with your graff, either in, or besides the knot, two inches long, and make your graff agree jump with the Cyen, and gash your graff and your Cyen in the middest of the wound, length-way, a straw breadth deep, and thrust the one into the other, wound to wound, sap to sap, bark to bark, then tye them close, and clay them: This may do well. The fairest graff I have in my little Orchard, which I have planted, is thus packt on, and the branch whereon I put him, is in his plentiful Root.

To be short in this point, cut your graff in any sort or fashion

two inches long, and joyn him cleanly, and close to any other sprig of any Tree in the latter end of the time of graffing, when sap is somewhat rise, and in all probability, they will close and thrive: thus;



The sprig. *The graff.* *The twig.* *The graff.*

Or any other fashion you think good.

Innoculating. Innoculating is an eye, or bud, taken bark and all from one Tree, and placed in the room of another eye, or bud, of another; cut both of one compass, and their bound. This must be done in Summer, when the sap is proud.

Graffing in Scutchion. Much like unto this, is, that they call graffing in the scutchion; they differ thus: That here you must take an eye with his leaf, or (in mine opinion) a bud with his leaves. (Note that an eye is for a Cyen, a bud is for flowers and fruit) and place them on another Tree, in a plain, (for they so teach) the place, or bark, where you must set it, must be thus cut with a sharp knife, and the bark raised with a wedge, and then the eye or bud put in, and so bound up, I cannot deny but such may grow. And your bud if he take will flower, and bear fruit in that year; as some graffs, and sets also, being set for blooms. If these two kinds thrive, they reform but a spray, and an under growth: Thus you may place Roses, or Thorns, and Cherries on Apples, and such like. Many write much more of graffing, but to small purpose; whom we leave to themselves, and their followers, and ending this secret, we come in the next Chapter to a point of knowledge, most requisite in an Arborist, as well for all other Woods, as for an Orchard.

CHAP. II.

Of the right dressing of Trees.

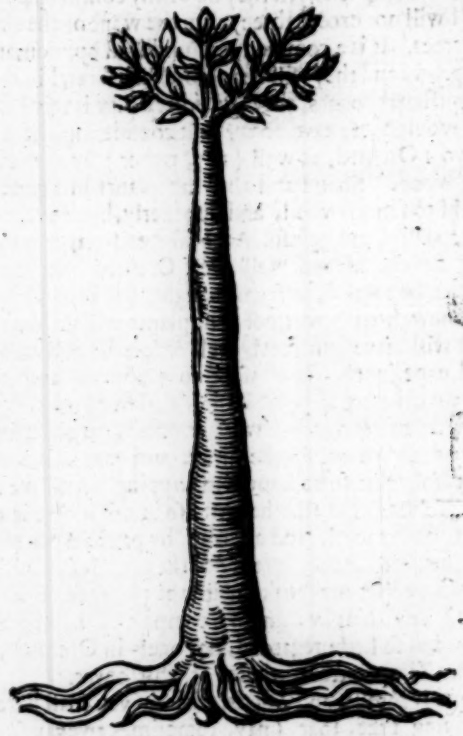
Necessity of dressing trees. IF all these things aforesaid were indeed performed, as we have shewed them in words, you should have a perfect Orchard, nature and substance, begun to your hand: And yet are all these things nothing, if you want that skill to keep and dress your Trees. Such is the condition of all earthly things, whereby a man receiveth profit, or pleasure, that they degenerate presently

ly without good ordering. Man himſelf, left to himſelf, grows from his heavenly and ſpiritual generation, and becometh beaſtly, yea, deviliſh to his own kind, unleſs he be regenerate. No marvel then, if Trees make their ſhoots, and put their ſprays diſorderly. And truly, (if I were worthy to judge) there is not a miſchief that breedeth greater and more general harm to all the Orchard, (eſpecially, if they be of any continuance) that ever I ſaw, (I will not except three) than the want of the skilful dreſſing of trees. It is a common, and unskilful opinion, and saying, Let all grow, and they will bear more fruit: and if thou lop away ſuperfluous boughs, they ſay, what a pity is this? how many Apples would theſe have born? not conſidering, there may ariſe hurt to your Orchard, as well (nay, rather) by abundance, as by want of wood. Sound and thriving plants in a good Soil will ever yield too much wood, and diſorderly, but never too little: So that a skilful and painful 'Arboriſt need never want matter to effect a plentiful and well dreſt Orchard; for it is an eaſie matter to take away ſuperfluous boughs, (if your Gardner have skill to know them) whereof your plants will yield abundance, and skill will leave ſufficiently well ordered. All ages, both by rule and experience, do conſent to a pruning and lopping of Trees: yet have not any that I know deſcribed unto us, (except in dark and general words) what, or which, are thoſe ſuperfluous boughs, which we muſt take away, and that is the chief and moſt needful point to be known in lopping. And we may well aſſure our ſelves, (as in all other Arts, ſo in this) there is a vantage and dexterity by skill, and an habit by practice out of experience, in the performance hereof, for the profit of mankind; yet do not I know (let me ſpeak it with the patience of our cunning Arboriſts) any thing within the compaſs of human affairs ſo neceſſary, and ſo little regarded, not onely in Orchards, but alſo in all other Timber-trees, where, or whatſoever. General rule.

How many foreſts, and woods, wherein you ſhall have for one lively thriving Tree, four (nay, ſometimes twenty four) evil thriving, Rotten, and dying Trees, even while they live? and in ſtead of trees, thouſands of buſhes and ſhrubs? What rottenneſs, what hollowneſs, what dead arms, withered tops, curtalled trunks? what loads of moſſes, drooping boughs, and dying branches Timber-wood evil dreſt.

branches you ſhall ſee every where? And thoſe that are like in this ſort, are in a manner all unprofitable boughs, cankered arms, crooked, little, and ſhort boals; what an infinite number of buſhes, ſhrubs, and skrogs of hazels, thorns, and other profitable wood, which might be brought by dreſſing to become great and goodly trees? Conſider now the cauſe: The leſſer wood hath been

The cauſe of hurts in woods.



Imagine the Root to be ſpread far wider.

ſpoiled with careleſs, unskilful, and untimely ſtowing, and much alſo of the great wood. The greater trees at the firſt riſing have filled, and over-laden themſelves with a number of waſtful boughs,

boughs and ſuckers, which have not onely drawn the ſap from the boal, but alſo have made it knotty, and themſelves and the boal moſſie for want of dreſſing, whereas, if in the prime of growth they had been taken away cloſe, all but one top, (according to this pattern) and clean by the bulk, the ſtrength of all the ſap ſhould have gone to the bulk, and ſo he would have recovered, and covered his knots, and have put forth a fair, long, and ſtrait body, (as you ſee) for timber profitable, huge, great of bulk, and of infinite laſt. Dreſs timber-trees, how.

If all Timber-trees were ſuch, (will ſome ſay) how ſhould we have crooked wood for wheels, &c?

Anſw. Dreſs all you can, and there will be enough crooked for thoſe uſes.

More than this, in moſt places, they grow ſo thick, that neither themſelves, nor earth, nor any thing under or near them, can thrive, nor Sun, nor Rain, nor Air can do them, nor any thing near or under them, any profit or comfort.

I ſee a number of Hags, where, out of one Root, you ſhall ſee three or four, (nay, more, ſuch is men's unskilful greedineſs, who deſiring many, have none good) pretty Oaks, or Aſhes, ſtrait and tall, becauſe the Root at the firſt ſhoot gives ſap amain: but if one onely of them might be ſuffered to grow, and that well, and cleanly pruned, all to his very Top, what a Tree ſhould we have in time? And we ſee by thoſe Roots, continually and plentifully ſpringing, notwithſtanding ſo deadly wounded, what a commodity ſhould ariſe to the owner, and the Common-wealth, if wood were cheriſhed, and orderly dreſſed.

The waſte boughs cloſely and skilfully taken away, would give us ſtore of fences, and fuel, and the bulk of the Tree in time would grow of huge length, and bigneſs. But here (me-thinks) I hear an unskilful Arboriſt ſay, that Trees have their ſeveral forms, even by nature, the Pear, the Holly, the Aſp, &c. grow long in bulk, with few and little arms, the Oak by nature broad, and ſuch like. All this I grant, but grant me alſo, that there is a profitable end and uſe of every Tree, from which if it decline, (though by nature) yet man by art may (nay, muſt) correct it. Profit of trees dreſſed. The end of trees.

Now, other end of Trees, I could never learn, than good Timber; fruit much and good, and pleaſure, uſes phyſical hinder nothing a good form.

Nei-

Trees will take any form.

Neither let any man ſo much as think, that it is unprofitable, much leſs unpoſſible, to reform any Tree of what kind ſoever: For (believe me) I have tried it, I can bring any tree (beginning betimes) to any form. The Pear and Holly may be made to ſpread, and the Oak to cloſe.

But, why do I wander out of the compaſs of mine Orchard, into the Foreſts and Woods? Neither yet am I from my purpoſe; if boals of timber-trees ſtand in need of all the ſap, to make them great and ſtrait, (for ſtrong growth and dreſſing makes ſtrong trees) then it muſt be profitable for fruit, (a thing more immediately ſerving a man's need) to have all the ſap his Root can yield: for as timber, ſound, great, and long, is the *good of Timber-trees*, and therefore they bear no fruit of worth: So fruit, good, ſound, pleaſant, great, and much, is the Fruit-trees end. That Gardner therefore, ſhall perform his duty skilfully, and faithfully, which ſhall ſo dreſs his Trees, that they may bear ſuch and ſuch ſtore of fruit, which he ſhall never do, (I dare undertake) unleſs he keep this Order in dreſſing his Trees.

The end of trees.

How to dreſs a fruit-tree.

A Fruit-tree ſo ſtanding, that there need none other end of dreſſing but fruit, (not Ornaments, nor walks, nor delight to ſuch as would pleaſe their eye onely, and yet the beſt form cannot but both adorn and delight) muſt be parted from within two foot or thereabouts of the earth, ſo high to give liberty to dreſs his Root, and no higher, for drinking up the ſap that ſhould feed his fruit, for the boal will be firſt, and beſt ſerved, and fed, becauſe he's next the Root, and of greater wax and ſubſtance, and that makes him longeſt of Life, into two, three, or four arms, as your ſtock or graffs yield twigs, and every arm into two or more branches, and every branch into his ſeveral Cyens, ſtill ſpreading by equal degrees, ſo that his loweſt ſpray be hardly without the reach of a man's hands, and his higheſt be not paſt two yards higher, rarely, (eſpecially in the middeſt) that no one twig touch his fellow. Let him ſpread as far as he lift, without his maſter-bough, or lop equally. And when any bough doth grow ſadder, and fall lower than his fellows, (as they will with weight of fruit) eaſe him the next ſpring of his ſuperfluous twigs, and he will Riſe; when any bough or ſpray ſhall amount above the reſt, either ſnub his top with a nip be-

twixt

twixt your finger and your thumb, or with a ſharp knif, and take him clean away; and ſo you may uſe any Cyen you would reform; and as your tree grows in ſtature, and in ſtrength, ſo let him riſe with his tops but ſlowly, and early, eſpecially in the middeſt, and equally, and in breadth alſo; and follow him upward with lopping his under growth, and water boughs, keeping the ſame diſtance of two yards, but not above three in any wiſe, betwixt the loweſt and the higheſt twigs.

Benefits of good dreſſing. Remedy.

1. Thus you ſhall have well liking, clean-skind, healthful, great, and long-laſting trees.

2. Thus ſhall your tree grow low and ſafe from winds, for his top will be great, broad, and weighty.

3. Thus growing broad, ſhall your trees bear much fruit (I dare ſay) one as much as ſix of your common trees, and good without ſhadowing, dropping and fretting, for his boughs, branches, and twigs ſhall be many, and thoſe are they (not the boal) which bear fruit.

4. Thus ſhall your boal being little (not ſmall, but low) by reaſon of his ſhortneſs, take little, and yeeld much ſap to fruit.

5. Thus your trees by reaſon of ſtrength in time of ſetting ſhall put forth more bloſſomes and more fruit, becauſe free from taints (for ſtrength is a great help to bring forth much) and ſafely, whereas weakneſs fails in ſetting, though the ſeaſon be calm.

Some uſe to bare trees Roots in Winter, to ſtay the ſetting till hotter ſeaſons, which I diſcommend, becauſe

1. They hurt the Roots.

2. It ſtays nothing at all.

3. Though it did, being ſmall, with us in the North they have their part of our *April* and *May* Froſts.

4. Hindrance cannot profit weak trees in ſetting.

5. They waſte much labour.

6. Thus ſhall your tree be eaſie to dreſs, and without danger, either to the tree or the dreſſer.

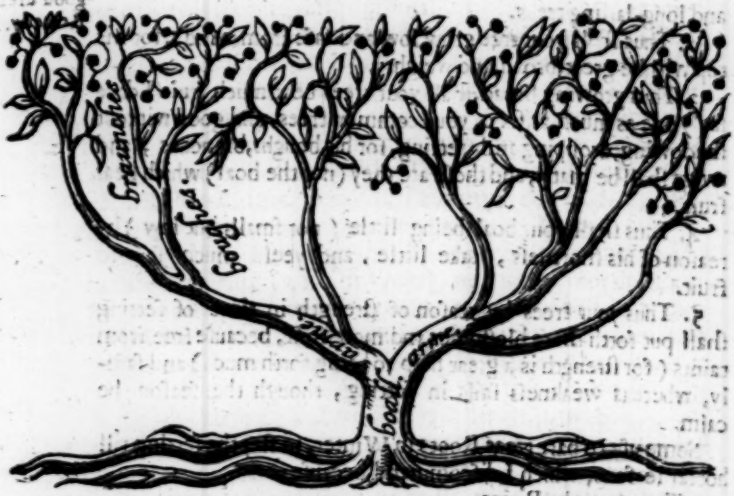
7. Thus may you ſafely and eaſily gather your fruit without falling, bruiſing, or breaking of Cyens.

This is the beſt form of a fruit tree, which I have here ſhad-

dowed out of the better capacity of them that are led more with the eye, than the mind, craving pardon for the deformity, because I am nothing skilful either in the painting or carving.

Imagine that the paper makes but one side of the tree to appear, the whole round compass will give leave for many more arms, boughs, branches, and Cyens.

The perfect form of a Fruit-tree.



If any tree cannot well be brought to this form: *Experto crede Roberto*; I can shew divers of them under twenty years of age.

The fittest time of the Moon for proyning, is, as of grafting, when the sap is ready to stir (not proudly stirring) and so to cover the ground: and of the year, a month before (or at least when) you graff. Dress Pears, Apricock, Peaches, Cherries, and Bullies sooner. And old trees before young plants, you may dress at any time betwixt Leaf and Leaf. And note, where you take any thing away, the sap the next Summer will be putting: Be sure therefore when he puts a bud in any place where you would not have him, rub it off with your finger.

The best time for proyning.

And

And here you muſt remember the common homely Proverb : Dreſſing betime.

Soon crooks the tree
That good Camrel muſt be.

Begin betimes with trees, and do what you liſt : but if you let them grow great and ſtubborn, you muſt do as the tree liſt. They will not bend but break, nor be wound without danger. A ſmall branch will become a bough, and a bough an arm in bigneſs. Then if you cut him, his wound will feſter, and hardly without good skill recover : therefore, *Obſta principiis.* Of ſuch wounds, and leſſer, or any bough cut off a handful or more from the body, comes hollowneſs and untimely death. And therefore when you cut, ſtrike cloſe, and clean, and upward, and leave no bunch. Faults of evil dreſt trees and the remedy.

This form in ſome caſes ſometimes may be altered, if your tree, or trees, ſtand near your walks, if it pleaſe your fancy more, let him not break till his boal be above your head, ſo may you walk under your trees at your pleaſure. Or if you ſet your fruit trees for your ſhades in your Groves, then I reſpect not the form of the tree but the comlineſs of the walk. The form altereth.

All this hitherto ſpoken of dreſſing, muſt be underſtood of young plants, to be formed: it is meet ſomewhat be ſaid for the inſtruction of them that have old trees already formed, or rather deformed: for *Malum non vitatur niſi cognitum.* The faults therefore of a diſordered tree, I find to be five. Dreſſing of old trees.

1. An unprofitable boal.
2. Water boughs.
3. Fretters.
4. Suckers. And,
5. One principal top. Faults are five and their remedies.

A long boal aſketh much feeding, and the more he hath the more he deſires, and gets, (as a drunken man drink, or a covetous man wealth,) and the leſs remains for the fruit; he puts his boughs into the air, and makes them, the fruit and it ſelf more dangered with winds; for this I know no remedy, after that the tree is come to growth; once evil, never good. Long boal. No remedy.

Water boughs, or under growth, are ſuch boughs as grow low under others, and are by them over-grown, over-ſhadowed, dropped on, and pin'd for want of plenty of ſap, and by that 1. Water-boughs.

means in time dye, for the ſap preſſeth upward: and it is like water in her courſe, where it findeth moſt iſſue, thither it floweth, leaving the other leſs ſluices dry, even as wealth to wealth, and much to more. Theſe ſo long as they bear, they bear leſs, worſe and fewer fruit, and wateriſh.

Remedy. The remedy is eaſie, if they be not grown greater than your arm, lop them cloſe and clean, and cover the middle of the wound; the next Summer when he is dry, with a ſalve made of tallow, tarr, and a very little pitch, good for the covering of any ſuch wound of a great tree: unleſs it be bark pil'd, and then a ſear cloth of freſh butter, honey and wax preſently (while the wound is green) applyed, is a ſoveraign remedy, in Summer eſpecially. Some bind ſuch wounds with a thumb Rope of hay, moiſt, and rub it with dung.

Bark pil'd, and the remedy.

Fretters. Fretters are, when as by negligence of the Gardener, two or more parts of the tree, or of divers trees, as arms, boughs, branches, or twigs, grow ſo near and cloſe together, that one of them by rubbing doth wound one another. This fault of all other ſhews the want of skil (or care at leaſt) in the arboriſt: for here the hurt is apparent, and the remedy eaſie, ſeen to betimes: galls are wounds, incurable, but by taking away thoſe members; for let them grow, and they will be worſe and worſe, and ſo kill themſelves with civil ſtrife for Roomth, and danger the whole tree. Avoid them betime therefore, as a Common-wealth doth boſome enemies.

Touching.

Remedy.

Suckers. A Sucker is a long, proud, and diſorderly Cyen, growing ſtreight up (for pride of ſap makes proud, long, and ſtreight growth) out of any lower parts of the tree, receiving a great part of the ſap, and bearing no fruit, till it have tirannized over the whole tree. Theſe are like idle and great Drones amongſt Bees: and proud and idle members in a Common-Wealth.

The Remedy of this is, as of water boughs, unleſs they be grown greater than all the reſt of the boughs; and then your Gardener (at your diſcretion) may leave him for his boal, and take away all, or the moſt of the reſt: If he be little ſlip him, and ſet him, perhaps he will take: my faireſt Apple tree was ſuch a ſlip.

One principal top or bough, and remedy. One or two principal top boughs are as evil in a manner as ſuckers; they riſe of the ſame cauſe, and receive the ſame Remedy: yet theſe are more tolerable, becauſe theſe bear fruit, yea the beſt

but

but Suckers of long time do not bear

I know not how your tree should be faulty, if you reform all your vices timely, and orderly. As these Rules serve for dressing young trees, and sets in the first setting, so may they well serve to help old trees, though not exactly to cure them. Instruments for dressing.

The Instruments fittest for all these purposes, are most commonly, for the greatest trees, an handsome, long, light Ladder or Firpole, a little, nimble, and strong armed Saw, and sharp. For less trees, a little and sharp hatchet, a broad mouched Chesel, strong and sharp, with an hand beetle, your strong and sharp Clever, with a knock, and (which is a most necessary instrument amongst little trees) a great hasted and sharp knife or whittle. And as needful is a Stool on the top of the Ladder of eight or more rungs, with two back feet, whereon you may safely, and easily to stand to graff, to dress, and to gather fruit thus formed. The feet may be fast wedged in; but the Ladder must hang loose with two bands of Iron: and thus much of dressing trees for fruit, formally to profit.

CHAP. XII.
Of Soiling.

THere is one thing yet very necessary for to make your Orchard both better, and more lasting: Yea so necessary, that without it your Orchard cannot last, nor prosper long, which is neglected generally both in precepts and in practice, *viz.* manuring with soil: whereby it hapneth that when trees (amongst other evils) through want of fatness to feed them, become mossie, and in their growth are evil (or not thriving) it is either attributed to some wrong cause, as age (when indeed they are but young) or evil standing (stand they never so well) or such like, or else the cause is altogether unknown, and so not amended. Necessity of soyling.

Can there be devised any way by nature, or art, sooner or soundlier to suck out, and take away the heart of earth, then by great trees; such great bodies cannot be sustained without great store of sap? what living body have you greater then of trees; the great Sea monsters (whereof one came to land, at *Teesemouth* Trees great Suckers.

in

in *Yorkshire*, hard by us, 18 yards in length, and near as much in compass) seem hideous, huge, strange, and monstrous, because they be indeed great, but especially, because they are seldome seen: but a tree liking, come to his growth and age, twice that length, and of a bulk never so great, besides his other parts, is not admired, because he is so commonly seen. And doubt not, but if he were well regarded for his kernel, by succeeding ages, to his full strength, the most of them would double their measure. About fifty years ago, I heard by credible and constant reports, That in *Brookham-Park* in *Westmerland*, near unto *Penrich*, there lay a blown Oak, whose trunk was so big, that two Horse-men being the one on the one side, and the other on the other side, they cold not see one another, to which if you add his arms, boughs, and roots, and consider of his bigness, what would he have been, if preserved to the vantage? Also I read in the History of the *West-Indians*, out of *Peter Martyr*, that sixteen men taking hands one with another, were not able to fathome one of those trees about. Now nature having given to such, a faculty by large and infinite Roots, taws and tangles, to draw immediately his sustenance from our common mother, the earth (which is like in this point to all others mothers that bear) hath also ordained that the tree over-laden with fruit, and wanting sap to feed all she hath brought forth, will wain all she cannot feed, like women bringing forth more Children at once than she hath teats. See you not how trees especially, by kind being great, standing so thick and close, that they cannot get plenty of sap, pine away all the grass, weeds, lesser shrubs and trees, yea, and themselves also, for want of vigour of sap? so that trees growing large, sucking the soil whereon they stand continually and amain, and the foizon of the earth that feeds them decaying (for what is there that wastes continually, that shall not have an end?) must either have supply of sucking or else leave thriving and growing. Some grounds will bear corn while they be new, and no longer, because their crust is shallow, and not very good, and lying they scind and wash and become barren. The ordinary corn soils continue not fertile, without fallowing and soiling, and the best requires supply even for the little body of corn. How then can we think that a-

ny

ny Ground, how good soever, can sustain bodies of such greatness, and such great feeding; without great plenty of sap rising from good earth? This is one of the chief causes why so many of our Orchards in England are so evil thriving when they come to growth, and our fruit so bad. Men are loath to bestow much ground, and desire much fruit, and will neither set their trees in sufficient compass, nor yet feed them with manure. Therefore of necessity Orchards must be soiled. Great bodies

The fittest time is, when your trees are grown great, and have neer hand spread your earth, wanting new earth to sustain them, which if they do, they will seek abroad for better earth: and shun that which is barren (if they find better) as cattel evil pasturing. For nature hath taught every creature to desire and seek his own good, and to avoid hurt. The best time of the year is at the fall, that the frost may bite and make it tender, and the rain wash it into the roots. The Summer time is perilous if you dig, because the sap stirs amain. The best kind of soil is such as is fat, hot, and tender. Your earth must be lightly opened, that the Dung may go in, and with away; and but shallow, lest you hurt the Roots; and in the spring, closely and equally made plain again for fear of Suckers. I could wish, that after the trees have fully possessed the soil of mine Orchard, that every seven years at least, the soil were bespread with dung half a foot thick at least. Puddle water out of the Dungbill poured on plentifully, will not only moisten but fatten exceedingly in *June*, and *July*. If it be thick and fat, and applied every year, your Orchard shall need none other soiling. Your ground may be so low at the River side, that the flood standing some dates and nights thereon, shall save you all this labour of soiling.

CHAP. XIII.

Of Annoyances.

A Chief help to make every thing good, is to avoid the evill thereof: you shall never attain to that good of your Orchard you look for, unless you have a Gardiner that can discern the diseases of your trees, and other anoiances of your Orchard, and find out the causes thereof, and know and apply fit Remedies for the same. *For be your ground such plants and trees as you would wish, and if they be mixed with hurtful things, what*

have

have you gained, but your labour for your travel? it is with an Orchard and every tree, as with man's body. The best parts of physick for preservation of health, is to foresee and cure diseases.

Two kinds of evils in an Orchard.

All the diseases of an Orchard are of two sorts, either internal, or external, I call those inward hurts which breed on, and in, particular trees.

1. Galls.
2. Canker.
3. Moss.
4. Weakness in setting.
5. Bark-bound.
6. Bark pild.
7. Worm.
8. Deadly wounds.

Galls.

Galls, Cankers, Moss, Weakness, though they be divers diseases, yet (howsoever authors think otherwise) they rise all out of the same cause.

Galls we have described with their cause and remedy, in the eleventh Chapter under the name of fretters.

Canker.

Canker is the consumption of any parts of the tree bark and wood; which also in the same place is deciphered under the title of water-boughs.

Moss.

Moss is sensibly seen and known of all, the cause is pointed out in the same Chapter, in the discourse of Timber-wood, and partly also in the remedy: but for Moss add this; that any time in summer (the spring is best, when the cause is removed) with an Hair cloth immediately after a shower of rain, rub off your Moss or with a piece of wood (if the moss abound) formerly like a great Knife.

Weakness in setting.

Weakness in the setting of your fruit shall you find there also in the same Chapter, and his remedy. All these flow from the want of Room: in good soil, wrong planting, Chapter seven, and evil, or no dressing.

Bark-bound.

Bark bound as I think riseth of the same cause, and the best and present remedy (the causes being taken away) is with your sharp knife in the spring, length way to launce his bark thorow-out three or four sides of his boul.

Worm.

The disease called the worm is thus discerned, the bark will be hollow in divers places like gall, the wood will dye and dry, and you shall see easily the bark swell: it is verily to be thought that therein is bred some Worm. I have not yet thorowly sought it out, because I was never troubled therewithall: but only

onely have seen such Trees in divers places: I think it a Worm rather, because I see this disease in Trees, bringing fruit of sweet taste, and the swelling shews as much. The remedy, (as I conjecture) is, so soon as you perceive the wound, the next Spring cut it out, bark and all, and apply Cows piss and vinegar presently, and so twice or thrice a week, for a months space: For I well perceive, if you suffer it any time, it eats the Tree, or Bough round, and so Kills. *Since I first wrote this Treatise, I have changed my mind concerning the Disease called the Worm, because I read in the History of the West-Indians, that their Trees are not troubled with the disease called the Worm, or Canker, which ariseth of a raw and evil concocted humor, or sap. Witnesse* Pliny, *by reason the Country is more hot than ours; wherefore, I think the best remedy, is, (not disallowing the former, considering that the Worm may breed by such an humor) warm standing, sound lopping, and good dressing.*

Bark-pill'd, you shall find with his remedy, in the eleventh Chapter.

Deadly wounds are, when a man's *Arborist* wanting skill, cuts off arms, boughs, or branches an inch, or (as I see sometimes) an handful, or half a foot or more from the body: *These so cut, cannot cover in any time with sap, and therefore they dye, and dying, they perish the heart, and so the Tree becomes hollow, and with such a deadly wound, cannot live long.* Wounds. Remedy.

The remedy is, if you find him before he be perished, cut him close, as in the 11 Chapter: If he be boal'd, cut him close, fill his wounds though never so deep, with morter well tempered, and so close at the top his wound with a Sear-cloath nailed on, that no Air nor Rain approach his wound. If he be very old, and declining, he will recover; and the hole being closed, his wound within shall not hurt him for many years.

Hurts on your Trees are chiefly, Ants, Earwigs, and Caterpillers. Of Ants, and Earwigs, is said, chap. 10. *Let there be no swarm of Pis-mire near your Tree roots, no, not in your Orchard: burn them over in a frost, and pour in water, and you kill them.*

For *Caterpillers*, the vigilant Fruiterer shall soon espy their Lodging by their web, or the decay of leaves eaten round about them: And being seen, they are easily destroyed with your hand,

or rather (if your Tree may ſpare it) take ſprig and all: for the red ſpeckled Butter-fly doth ever put them, being her ſperm, among the tender ſprays for better feeding, eſpecially in drought: and tread them under your feet. I like nothing of ſmoak among Trees. Unnatural heats are nothing good for natural Trees. *This, for Diſeaſes of particular Trees.*

External hurts are either things natural, or artificial. Natural things, externally hurting Orchards.

I Beaſts.
1 Deer.
2 Goats.
3 Sheep.
4 Hare.
5 Cony.
6 Cattel.
7 Horſe.

II Birds.
1 Bulfinch.
2 Thruſh.
3 Black-bird.
4 Crow.
5 Pye,
&c.

The other things are.
1 Winds.
2 Cold.
3 Trees.
4 Weeds.
5 Worms.
6 Moles.
7 Filth.
8 Poyſonful ſmoak.

External wilful evils are theſe.
1 Walls.
2 Trenches.
3 Other works noiſome, done in or near your Orchard.
4 Evil Neighbours.
5 A careleſs Maſter.
6 An undiſcreet, negligent, or no keeper.

See you here an whole Army of miſchiefs banded in troops againſt the moſt fruitful Trees the earth bears? aſſailing your good labours. Good things have moſt enemies.

Remedy. A skilful Fruiterer muſt put to his helping hand, and disband, and put them to flight.

Deer, &c. For the firſt rank of Beaſts, beſides your out ſtrong fence, you muſt have a fair and ſwift Grey-hound, a Stone-bow, Gun, and if

if need require, an Apple with an hook for a Deer, and an Hare-pipe for an Hare.

Your Cherries, and other Berries, when they be ripe, will draw all the Black-birds, Thruſhes, and Mag-pies, to your Orchard. The Bull-finch is a devourer of your fruit in the bud, I have had whole Trees ſhall'd our with them in Winter-time. Birds.

The beſt remedy here is a Stone-bow, a Piece, eſpecially if you have a Muſket, or Sparrow-hawk in Winter, to make the Black-bird ſtoop into a buſh, or hedge.

The Gardner muſt cleanſe his Soil of all other trees, but fruit-trees, as aforeſaid, chap. 2. for which it is ordained; and I would eſpecially name Oaks, Elms, Aſhes, and ſuch other great wood, but that I doubt it would be taken as an admiſſion of leſſer trees; for I admit of nothing to grow in my Orchard but fruit and flowers: if ſap can hardly be good to feed our fruit-trees, ſhould we allow of any other? eſpecially thoſe that will become their Maſters, and wrong them in their lively-hood?

And although we admit without the fence, of Wall-nuts in moſt plain places, Trees middle-moſt, and Aſhes, or Oaks, or Elms utmoſt, ſet in comely rows equally diſtant, with fair Alleys 'twixt row and row, to avoid the boiſterous blaſts of winds, and within them alſo others for Bees, yet we admit none of theſe into your Orchard-plat: other remedies than this have we none againſt the nipping Froſt. Winds. Froſts.

Weeds in fertil Soil, (becauſe the general courſe is ſo) till your Trees grow great, will be noiſome, and deform your alleys, walks, beds, and ſquares; your under Gardeners muſt labour to keep all cleanly, and handſome from them, and all other filth, with a Spade, weeding Knives, rake with Iron teeth, a ſcraple of Iron thus formed. Weeds.

For Nettles, and ground Ivy after a ſhowr.

When weeds, ſtraw, ſticks, and all other ſcrapings are gathered together, burn them not, but bury them under your cruſt in any place of your Orchard, and they will dye, and fatten your ground.

Worms. Moals.

Worms and Moals open the earth, and let in air to the Roots of your Trees, and deform your squares and walks; and feeding in the earth, being in number infinite, draw on barrenness.

Remedy.

Worms may easily be destroyed. Any Summer evening, when it is dark, after a shower with a candle you may fill bushels; but you must tread nimbly, and where you cannot come to catch them, so sift the earth with coal-ashes an inch or two thickness, and that is a plague to them, so is sharp gravel.

Moals will anger you, if your Gardener, or some other Moal-catcher ease you not; especially, having made their fortresses among the Roots of your Trees; you must watch her well with a Moal-spear, at morning, noon, and night: when you see her utmost hill, cast a trench betwixt her and her home, for she hath a principal mansion to dwell and breed in about *April*, which you may discern by a principal hill, wherein you may catch her, if you trench it round, and sure, and watch well; or wheresoever you can discern a single passage, (for such she hath) there trench, and watch, and have her.

Wilful anoyances must be prevented, and avoided by the love of the Master, and Fruiterer, which they bear to their Orchard.

Justice and liberality will put away evil Neighbours, or evil Neighbour-hood. And then, (if God bless and give success to your labours) I see not what hurt your Orchard can sustain.

CHAP. XIV.

The Age of Trees.

IT is to be considered, All this treatise of Trees tends to this end, that men may love and plant Orchards, whereunto there cannot be a better inducement than that they know, (or at least be perswaded) that all the benefit they shall reap thereby, whether of pleasure, or profit, shall not be for a day, or a month, or one, or many, but many hundred years. Of good things, the greatest, and most durable, is always the best. If therefore, out of reason, grounded upon experience, it be made (I think) manifest, but I am sure probable, that a Fruit-tree in such a Soil,

and

and Site, as is described, so planted, and trimmed, and kept as is afore appointed, and duely soiled, shall dure a thousand years: Why should we not take pains, and be at two or three years charges, (for under seven years will an Orchard be perfected for the first planting, and in that time be brought to fruit) to reap such a commodity, and so long lasting? The age of Trees.

Let no man think this to be strange, but peruse, and consider the reason. I have Apple-trees standing in my little Orchard, which I have known these forty years, whose Age before my time I cannot learn, it is beyond memory, though I have inquired of divers aged Men of 80 years and upwards: These Trees, although come into my possession very ill ordered, and mishapen, and one of them wounded to his heart, and that deadly, (for I know it will be his death) with a wound, wherein I might have put my foot into the heart of his bulk, (now it is less) notwithstanding, with that small regard they have had since; they so like, that I assure my self they are not come to their growth by more than two parts of three, which I discern not onely by their own growth, but also by comparing them with the bulk of other trees. And I find them short (at least) by so many parts in bigness, although I know those other fruit-trees to have been much hindered in their stature by evil guiding. Here hence I gather thus: Gathered by reason out of experience.

If my Trees be a hundred years old, and yet went two hundred of their growth before they leave increasing, which make three hundred, then must we needs resolve, that this three hundred years are but the third part of a Trees life; because, (as all things living besides) so Trees must have allowed them for their increase one third, another third for their stand, and a third part of time also for their decay. All which time of a Tree amounts to nine hundred years; three hundred for increase, three hundred for his stand, whereof we have the term [stature] and three hundred for his decay: and yet I think (for we must conjecture by comparing, because no one man liveth to see the full age of Trees) I am within the compass of his Age, supposing always the foresaid means of preserving his life. Consider the Age of other living Creatures: The Horse, and moiled Ox, wrought to an untimely death, yet double the time of their increase. Parts of a Trees age.

creaſe. A Dog likewiſe increaſeth three, ſtands three at leaſt, and in as many (or rather more) decays.

Man's age. Every living thing beſtows the leaſt part of his Age in his growth, and ſo muſt it needs be with trees. A man comes not to his full growth and ſtrength (by common eſtimation) before thirty years, and ſome ſlender, and clean bodies, not till forty: So long alſo ſtands his ſtrength, and ſo long alſo muſt he have allowed by courſe of nature to decay: Ever ſuppoſing that he be well kept with neceſſaries, and from, and without ſtrains, bruiſes, and all other domineering diſeaſes. I will not ſay upon true report, that Phyſick holds it poſſible, that a clean body kept by theſe three Doctors, *Doctor Dyet*, *Doctor Quiet*, and *Doctor Merry-man*, may live near a hundred years: Neither will I here urge the long years of *Methuſelah*, and thoſe Men of that time, becauſe you will ſay, Man's days are ſhortned ſince the flood. But, what hath ſhortned them? God, for Man's ſins; but, by means, as want of Knowledge, evil Government, Riot, Gluttony, Drunkenneſs, and (to be ſhort) the encreaſe of the Curſe, our ſins increaſing in an Iron and wicked age,

Now, if a man, whoſe body is nothing (in a manner) but tender rottenneſs, whoſe courſe of Life cannot by any means, by Counſel, reſtraint of Laws, or puniſhment, nor hope of praiſe, profit, or eternal glory, be kept within any bounds, who is degenerate clean from his natural feeding, to effeminate niceneſs, and cloying his body with exceſs of meat, drink, ſleep, &c. and to whom nothing is ſo pleaſant, and ſo much deſired, as the cauſes of his own Death, as idleneſs, luſt, &c. may live to that age: I ſee not but a tree of a ſolid ſubſtance, nor damnified by heat, or cold, capable of, and ſubject to, any kind of ordering, or dreſſing, that a man ſhall apply unto him, feeding naturally, as from the beginning, disburthened of all ſuperfluities, eaſed of, and of his own according avoiding, the cauſes that may annoy him, ſhould double the life of a man, more than twice told: and yet natural Philoſophy, and the univerſal conſent of all Hiſtories tell us, that many other living creatures far exceed man in length of years: As the Hart, and the Raven. Thus reporteth that famous *Roterdam* out of *Heſiodus*, and many other Hiſtoriographers. The teſtimony of *Cicero* in his book *De Senectute*, is weighty to this

this purpoſe, that we muſt *in poſteras ætates ſerere arbores*, which can have none other ſence, but, that our fruit-trees, whereof he ſpeaks, can indure for many ages.

What elſe are trees, in compariſon with the earth, but as hairs to the body of a man? And it is certain, without poyſoning, evil, and diſtemperate Dyet, and uſage, or other ſuch forcible cauſe, the hairs dure with the body. That they be called excrements, it is by reaſon of their ſuperfluous growth: (for cut them as often as you liſt, and they will ſtill come to their natural length) Not in reſpect of their ſubſtance, and nature. Hairs endure long, and are an ornament, and of uſe alſo to the body, as trees to the earth.

So that I reſolve upon good reaſon, that fruit-trees well ordered, may live and like a thouſand years, and bear fruit; and the longer, the more, the greater, and the better, becauſe his vigour is proud and ſtronger, when his years are many. You ſhall ſee old trees put forth their buds, and bloſſoms, both ſooner and more plentiful than young trees, by much. And I ſenſibly perceive my young trees to inlarge their fruit as they grow greater, both for number and greatneſs. Young Heifers bring not forth Calves ſo fair, neither are they ſo plentiful to milk, as when they be come to be old Kine. No good Houſ-wife will breed of a young, but of an old breed-mother: It is ſo in all things naturally, therefore in Trees.

The age of Timber-trees.

And if fruit-trees laſt to this age, how many ages is it to be ſuppoſed, ſtrong, and huge Timber-trees will laſt? whoſe huge bodies require the years of divers *Methuſelahs*, before they end their days, whoſe ſap is ſtrong and bitter, whoſe bark is hard and thick, and their ſubſtance ſolid and ſtiff: all which are defences of health, and long life. Their ſtrength withſtands all forcible winds; their ſap of that quality is not ſubject to worms, and tainting; their bark receives ſeldome or never, by caſualty, any wound: And not onely ſo, but he is free from removals, which are the death of millions of Trees, whereas the fruit-tree in compariſon, is little, and often blown down, his ſap ſweet, eaſily, and ſoon tainted, his bark tender, and ſoon wounded, and himſelf uſed by man, as man uſeth himſelf, that is, either unskilfully, or careleſsly.

It

Age of Trees discerned. It is good for some purposes, to regard the age of your fruit-trees, which you may easily know, till they come to accomplish twenty years, by his Knots: Reckon from his Root upward an arm, and so to his top twig, and every years growth is distinguished from other by a Knot, except lopping or removing do hinder.

CHAP XV.

Of gathering and keeping Fruit.

General rule. ALthough it be an easie matter, when God shall send it, to gather and keep fruit, yet are there certain things worthy your regard: You must gather your fruit when it is Ripe, and not before, else will it wither, and be tough and sowr. All fruits generally are Ripe, when they begin to fall: for Trees do as all other bearers do, when their young ones are Ripe, they will wain them: The Dove her Pidgeons, The Coney her Rabbets, and Women their Children. Some fruit-trees sometimes getting a taint in the setting, with a frost, or evil wind, will cast their fruit untimely, but not before they leave giving them sap, or they leave growing: Except from this foresaid rule,

Cherries, &c. Cherries, Damsons, and Bullis. The Cherry is Ripe, when he is swelled, wholly Red, and sweet: Damsons and Bullis not before the first frost.

Apples. Apples are known to be Ripe, partly by their colour, growing towards a yellow, except the Leather-coat, and some Pears, and Greenings.

When. Timely Summer-fruit will be ready, some at Midsummer, most at Lammas for present use; but generally, no keeping fruit before *Michaeltide*. Hard winter-fruit, and Wardens longer.

Gather at the full of the Moon, for keeping, gather dry for fear of Rotting.

Dry stalks. Gather the stalks withal, for a little wound in fruit is deadly; but not the stump, that must bear the next fruit; nor leaves, for moisture putrifies.

Severally. Gather every kind severally by it self, for all will not keep alike, and it is hard to discern them, when they are mingled.

Over-laden trees. If your Trees be over-laden, (as they will be, being ordered, as is before taught) I like better of pulling some off, (though they

be

be not ripe) near the top end of the bough, then of propping by much, the reſt ſhall be better fed. Propping puts the boughs in danger, and frets it at leaſt.

Inſtruments: A long Ladder of light Fir, a Stool-ladder, as in the eleventh chapter. A gathering-apron like a poke before you, made of purpoſe, or a Wallet hung on a bough, or a baſket with a ſieve bottom, or skin bottom, with larths or ſplinters under, hung in a rope to pull up and down: bruiſe none, every bruiſe is to fruit death; if you do, uſe them preſently. An hook to pull boughs to you is neceſſary. Break no boughs. Inſtruments. Bruiſes.

For keeping, lay them in a dry loft, the longeſt-keeping Apples firſt and furtheſt on drie ſtraw, on heaps, ten or fourteen days, thick, that they may ſweat. Then drie them with a ſoft and clean cloth, and lay them thin abroad. Long-keeping fruit would be turned once in a month ſoftly, but not in, nor immediately after froſt. In a loft, covered well with ſtraw, but rather with chaff or bran; for froſt doth cauſe tender rottenneſs. Keeping.

CHAP. XVI.

Of Profits.

NOw pauſe with your ſelf, and view the end of all your labours in an Orchard: unſpeakable pleaſure, and infinite commodity. The pleaſure of an Orchard I refer to the laſt Chapter, for the concluſion; and in this Chapter, a word or two of the profit, which throughly to declare is paſt my skill; and I account it as if a man ſhould attempt to add light to the Sun with a candle, or number the Stars. No man that hath but a mean Orchard or judgment but knows, that the commodity of an Orchard is great: Neither would I ſpeak of this, being a thing ſo manifeſt to all; but that I ſee, that through the careleſneſs of men, it is a thing generally neglected. But let them know, that they loſe hereby the chiefeſt good which belongs to houſe-keeping.

Compare the commodity that cometh of half an acre of ground, ſet with fruit-trees and herbs, ſo as is preſcribed, and an whole acre (ſay it be two) with corn, or the beſt commodity you can wiſh, and the Orchard ſhall exceed by divers degrees.

In *France* and ſome other Countries, and in *England*, they make great uſe of Cider and Perry, thus made: Dreſs every apple, the ſtalk, upper end, and all galls away, ſtamp them, and Cider and Perry.

ſtrain them, and within twenty four hours tun them up into clean, ſweet, and ſound veſſels, for fear of evil air, which they will readily take: and if you hang a poakful of Cloves, Mace, Nutmegs, Cinnamon, Ginger, and peels of Lemons in the middeſt of the veſſel, it will make it as wholeſome and pleaſant as Wine. The like uſage doth Perry require.

Theſe drinks are very wholeſome, they cool, purge, and prevent hot agues. But I leave this skill to Phyſicians.

Fruit. The benefit of your fruit, roots, and herbs, though it were but to eat and ſell, is much.

Water. Water diſtilled of Roſes, Woodbind, Angelica, are both profitable, and wondrous pleaſant, and comfortable. Saffron and Licoras will yield you much.

Conſerves. Conſerves and Preſerves are ornaments to your feaſts, health in your ſickneſs, and a good help to your friend, and to your purſe.

He that will not be moved with ſuch unſpeakable profits, is well worthy to want, when others abound in plenty of good things.

CHAP. XVII.

Ornaments.

ME-thinks hitherto we have but a bare Orchard for fruit, and but half good, ſo long as it wants thoſe comely Ornaments that ſhould give beauty to all our labours, and make much for the honeſt delight of the owner and his friends.

Delight the chief end of Orchards. For it is not to be doubted, but as God hath given man things profitable, ſo hath he allowed him honeſt comfort, delight, and recreation in all the works of his hands. Nay, all his labours under the Sun without this are troubles, and vexations of mind: For what is greedy gain without delight, but moiling, and turmoiling in ſlavery? But comfortable delight, with content, is the good of every thing, and the pattern of Heaven. A morſel of bread with comfort, is better by much than a fat Ox with unquietneſs. And who can deny but the principal end of an Orchard, is the honeſt delight of one wearied with the works of his lawful calling? The very works of, and in an Orchard and Garden, are better than the eaſe and reſt of, and from other labours. When God had made a man after his own

An Orchard delightſom.

Image,

Image, in a perfect ſtate, and would have him to repreſent himſelf in authority, tranquillity, and pleaſure upon the earth, he placed him in *Paradiſe*. What was *Paradiſe*? but a Garden, an Orchard of trees and herbs, full of pleaſure, and nothing there but delights. The gods of the earth reſembling the great God of heaven in Authority, Majeſty, and Abundance of all things; wherein is their moſt delight? and whither do they withdraw themſelves from the troubleſome affairs of their eſtate, being tired with the hearing and judging of litigious controverſies, choaken (as it were) with the cloſe air of their ſumptuous buildings, their ſtomachs cloied with variety of Banquets, their ears filled and over-burthen'd with tedious diſcourſings? Whither, but into their Orchards, made and prepared, dreſſed and deſtinated for that purpoſe, to renew and refreſh their ſenſes, and to call home their over-wearied ſpirits? Nay, it is (no doubt) a comfort to them, to ſet open their caſements into a moſt delicate Garden and Orchard, whereby they may not onely ſee that, wherein they are ſo much delighted, but alſo to give freſh, ſweet, and pleaſant air to their Galleries and Chambers.

An Orchard in Paradiſe.

Cauſe of wearifomneſs.

Orchard is the remedy.

And look what theſe men do by reaſon of their greatneſs and ability, provoked with delight, the ſame doubtleſs would every of us do, if power were anſwerable to our deſires; whereby we ſhew manifeſtly, that of all other delights on earth, they that are taken by Orchards are moſt excellent, and moſt agreeing with nature.

All delight in Orchards.

For whereas every other pleaſure commonly fills ſome one of our ſenſes, and that onely with delight; this makes all our ſenſes ſwim in pleaſure, and that with infinite variety, joyned with no leſs commodity.

This delights all the ſenſes.

That famous Philoſopher, and matchleſs Orator, *M. T. C.* preſcribeth nothing more fit, to take away the tedioufneſs of three or fourſcore years, than the pleaſure of an Orchard.

Delighteth old age.

What can your eye deſire to ſee, your ears to hear, your mouth to taſte, or your noſe to ſmell, that is not to be had in an Orchard, with abundance of variety? What more delightſome than an infinite variety of ſweet ſmelling flowers, decking with ſundry colours the green mantle of the earth, the univerſal

Cauſes of delight in any Orchard.

mother of us all,-ſo by them beſported, ſo dyed, that all the world cannot ſample them, and wherein it is more fit to admire the Dyer, than imitate his workmanſhip, colouring not onely the earth, but decking the air, and ſweetning every breath and ſpirit.

Flowers. The Roſe Red, Damask, Velver, and double double Province-Roſe, the ſweet Musk-Roſe double and ſingle, the double and ſingle White-Roſe: the fair and ſweet-ſenting Woodbine, double and ſingle, and double double. Purple Cowſlips, and double Cowſlips, and double double Cowſlips; Primroſe double and ſingle. The Violet nothing behind the beſt, for ſmelling ſweetly. A thouſand more will provoke your content.

Borders and ſquares. And all theſe by the skill of your Gardener, ſo comelily and orderly placed in your borders and ſquares, and ſo intermingled, that one looking thereon cannot but wonder to ſee, what Nature, corrected by Art, can do.

Mounts. When you behold in divers corners of your Orchard *Mounts* of ſtone or wood, curiouſly wrought within and without, or of earth covered with Fruit-trees, Kentiſh Cherries, Damſons, Plums, &c. with ſtairs of precious workman-ſhip; and in ſome corner (or more) a true Dial or Clock, and ſome Antick works; and eſpecially ſilver-ſounding Muſick, mixt Inſtruments, and Voices, gracing all the reſt: How will you be wrapt with delight!

Whence you may ſhoot a Buck.
Dial.
Muſick.

Walks. Large Walks, broad and long, cloſe and open like the *Tempe*-groves in *Theſſaly*, raiſed with gravel and ſand, having ſeats and banks of Camomile; all this delights the mind, and brings health to the body.

Seats.

Order of trees View now with delight the works of your own hands, your fruit-trees of all ſorts, loaden with ſweet bloſſoms, and fruit of all taſtes, operations and colours; your trees ſtanding in comely order which way ſoever you look.

Your borders on every ſide hanging and dropping with Feberries, Raſpberries, Barberries, Currans; and the roots of your trees powdred with Strawberries, Red, White, and Green, what a pleaſure is this! Your Gardener can frame your leſſer wood to the ſhape of men armed in the field, ready to give battel; of ſwift-running Grey-hounds, or of well-ſented and true-running Hounds

Shape of men and beaſts.

Hounds to chaſe the Deer, or hunt the Hare. This kind of hunting ſhall not waſte your corn, nor much your coin.

Mazes well framed a man's heighth, may perhaps make your friend wander in gathering of berries till he cannot recover himſelf without your help. Mazes.

To have occaſion to exerciſe within your Orchard, it ſhall be a pleaſure to have a Bowling-alley, or rather (which is more manly and more healthful) a pair of Butts, to ſtretch your arms. Bowling-Alley. Butts.

Roſemary and ſweet Eglantine are ſeemly ornaments about a door or window, and ſo is Woodbine. Herbs.

Look Chap. 15. and you ſhall ſee the form of a Conduit; if there were two or more, it were not amiſs. Conduit.

And in mine own opinion I could highly commend your Orchard, if either through it, or hard by it, there ſhould run a pleaſant River with ſilver ſtreams, you might ſit in your Mount, and angle a peckled Trout, ſleighty Eel, or ſome other dainty Fiſh. Or Moats, whereon you may row with a Boat, and fiſh with Nets. River. Moats.

Store of Bees in a warm and dry Bee-houſe, comely made of Fir-boards, to ſing, and ſit, and feed upon your flowers and ſprouts, make a pleaſant noiſe and ſight. For cleanly and innocent Bees, of all other things, love, and become, and thrive in an Orchard. If they thrive, (as they muſt needs, if your Gardener be skilful, and love them; for they love their friends, and hate none but their enemies) they will, beſides the pleaſure, yield great profit to pay him his wages; yea, the increaſe of twenty Stocks or Stools with other fees, will keep your Orchard. Bees.

You need not doubt their ſtings, for they hurt not whom they know, and they know their Keeper and acquaintance. If you like not to come among them, you need not doubt them; for but near their ſtore, and in their own defence, they will not fight, and in that caſe onely (and who can blame them?) they are manly, and fight deſperately. Some (as that honourable Lady at *Hackney*, whoſe name doth much grace mine Orchard) uſe to make ſeats for them in the ſtone-walls of their Orchard, or Garden, which is good, but wood is better.

A Vine over-ſhadowing a ſeat, is very comely, though her Grapes with us ripen ſlowly. Vine.

One

Birds. Nightingale.

One chief grace that adorns an Orchard, I cannot let ſlip: a brood of Nightingals, who with ſeveral notes and tunes, with a ſtrong delightſome voice out of a weak body, will bear you company night and day. She loves (and lives in) hots of woods in her heart. She will help you to cleanſe your trees of Caterpillars, and all noiſom worms and flies. The gentle Robin-red-breaſt will help her, and in winter in the coldeſt ſtorms will keep a part. Neither will the ſilly Wren be behind in Summer, with her diſtinct whiſtle, (like a ſweet Recorder) to chear your ſpirits.

Robin-Red-breaſt. Wren.

Black-bird. Thruſh.

The Black-bird and Threſtle (for I take it, the Thruſh ſings not, but devours) ſing loudly in a *May*-morning, and delights the ear much, and you need not want their company, if you have ripe Cherries or Berries, and would as gladly as the reſt do your pleaſure: but I had rather want their company than my fruit.

What ſhall I ſay? A thouſand of pleaſant delights are attending an Orchard; and ſooner ſhall I be weary, than I can reckon the leaſt part of that pleaſure, which one that hath, and loves an Orchard, may find therein.

What is there of all theſe few that I have reckoned, which doth not pleaſure the eye, the ear, the ſmell, and taſte? And by theſe ſenſes, as organs, pipes, and windows, theſe delights are carried to refreſh the gentle, generous, and noble mind.

Your own labour.

To conclude, what joy may you have, that you living to ſuch an age, ſhall ſee the bleſſing of God on your labours while you live, and leave behind you to heirs or ſucceſſors (for God will make heirs) ſuch a work, that many ages after your death ſhall record your love to their Country? And the rather, when you conſider (Chap. 14.) to what length of time your work is to laſt.

FINIS.